

Money

October, 1956

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Library of Congress Catalog Card Number: 52-13906

28124 0213

PRINTED IN THE UNITED STATES OF AMERICA

Preface to the Third Edition

In view of the extensive recent changes in our financial machinery, in the nature of economic doctrine, and in the economic problems facing contemporary America, the present volume has been completely rewritten and constitutes in a real sense a new book. Intended as an elementary text in courses in Money and Banking, it is adapted to class use not only in the liberal arts colleges but also in schools of business. Students in both types of institutions require an understanding of financial processes, problems, and policies which the volume seeks to give. Indeed, the prime motive for the rewriting of the book was to produce an up-to-date and teachable text.

Over the past two or three decades the subject of money and banking has been in the forefront of public discussion. Its vital part in relation to all phases of economic life has been widely recognized. The year 1941—when the last edition of the present work appeared—represents the termination of a decade of unemployment and the beginning of a period characterized by full employment and inflationary pressures of varying degree. The far-reaching changes in the underlying economic environment during both periods have resulted in extensive revisions in the structure of our financial institutions as well as in the literature on monetary theory and monetary policy.

In rewriting the book we have drastically altered the content of the previous edition. The discussion of commercial banking has been curtailed and an extensive discussion of the money-creating process has been included. The treatment of central banking has been completely recast in terms of the economic effects of monetary control. An appropriate balance has been preserved among the discussions of the institutional framework, monetary theory, monetary policy, and fiscal policy. Historical and institutional materials are not merely descriptive but are introduced to make the theory and policy discussions more realistic.

Because of the effect of savings and investment on prices and economic activity, this book treats all sectors of the financial system and not merely that of commercial banking. Throughout the text emphasis is placed upon the general principles directing the flow of savings into real investment and upon the role of the various financial institutions in facilitating the saving-investment process. By relating the general principles of money and banking to the operations of the economy as a whole, the present edition makes clear the func-

tioning of our financial system and indicates where reforms seem desirable.

In the present revision stylistic clarity and simplicity of presentation were the paramount goals. Generous utilization is made of balance sheets in explaining the specific operations of our financial system. From our teaching experiences we are convinced that this procedure does much to unravel the mysteries surrounding money and banking and makes more meaningful the analytical significance of the subject under discussion. Abundant use has also been made of illustrative tables and charts. Thought-provoking questions at the end of each chapter are designed to highlight key points in the text, and the selected references indicate up-to-date sources for further study.

Our task was lightened immeasurably by the assistance rendered by numerous persons. Governmental bodies, banks, and financial institutions and organizations have all been generous in furnishing information and material. Special mention should be made of Dr. Ralph A. Young, Director, and Susan S. Burr, Assistant Director, of the Division of Research and Statistics of the Board of Governors of the Federal Reserve System and Edison H. Cramer, Chief of the Division of Research and Statistics of the Federal Deposit Insurance Corporation. Professors D. V. Brown and C. Cary Brown of the Massachusetts Institute of Technology, R. S. Van de Woestyne of the University of Chicago, Edward Marcus and Melvin I. White of Brooklyn College, as well as Myron L. Hoch of the City College of New York made helpful suggestions dealing with various parts of the manuscript. We also wish to acknowledge our great debt to Professor Ezra Solomon of the University of Chicago. His professional competence in conjunction with a rare flair for exposition and pedagogy have contributed immeasurably to whatever success the book may enjoy. R. Kessel and R. J. Bates read various chapters in the book; their suggestions reduced errors in content and exposition. Pedro Leano assisted in the preparation of Part V, and Grany Dominy assisted in the preparation of Chapter 16. I. Lawrance cooperated in the preparation of the first version of the book, Gertrude H. Horowitz assisted in the typing, and Elisabeth Steinberg typed a large portion of the final copy as well as assisted in the preparation of the index. August Glaser of the National Association of Mutual Savings Banks prepared some of the charts. Needless to say, the authors assume sole responsibility for the book's shortcomings.

February, 1953
New York, N. Y.
Cambridge, Mass.

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to win a fortune in a pecuniary sense. To win by this money test is to certify one's self tangibly and demonstrably as having scored in the most widespread and absorbing of competitions. Is one a great artist—what do his pictures sell for? Or what is the income of this leading advocate? Or of that famous singer? How great are the author's royalties? The pecuniary standard tends to be carried over into nonpecuniary fields.

It is almost past belief how far both in degree and in direction money valuations pervade all our thinking. Cheapness is prone to be synonymous with ugliness, richness with beauty, elegance with expensiveness. No one can tell for himself where the really esthetic begins and the sheer pecuniary ends. In the field of morals, also, the so-called cash-register conscience is an actual thing. And one might go still further and note that almost all great political issues, and almost all absorbing social problems, and almost all international complications rest upon a pecuniary basis.

■ MONEY AND THE CONTROL OF ECONOMIC LIFE

The study of money and banking is a means to understanding how the operations of our financial institutions affect the functioning of our economic system. The ends of our study should be the formulation of monetary policies designed to assure that our monetary system will facilitate the attainment of those goals for which society expresses a desire.

In the nineteenth century the classical economists argued that money is essentially "colorless" and "adjusts itself to trade" rather than the reverse. To them money was useful as a laborsaving device which overcame the disadvantages of barter in effecting exchanges. Aside from this advantage of money, they insisted that the volume of output, the kinds and proportions of goods and services produced and consumed, and the distribution of wealth and income would be the same in a money economy as in an efficient barter economy.

Thus John Stuart Mill stated:

It must be evident, however, that the mere introduction of a particular mode of exchanging things for one another by first exchanging a thing for money, and then exchanging the money for something else, makes no difference in the essential character of transactions. . . . There cannot, in short, be intrinsically a more insignificant thing, in the economy of society, than money; except in the character of a contrivance for sparing time and labor. It is a machine for doing quickly and commodiously, what would be done, though less quickly and commodiously, without it: and like many other kinds of machinery, *it only exerts a distinct and independent influence of its own when it gets out of order.*^a

^a *Principles of Political Economy*, Book III, Chap. VII, Sec. 3. Italics added.

The classicists were of the opinion that monetary disorders were the exception rather than the rule; on the infrequent occasions when they occurred, the resulting disturbances were small enough to be ignored since they would correct themselves. The fundamental concern of the classical school was a consideration of the long run in which they assumed full employment would exist. By devoting attention to the long run (and since money in their view was passive in its effects on the economy), they could analyze the operations of the economic system in terms of barter.

With the passage of years there has been a growing concern about the short-run operations of the economy with its characteristic lapses from full employment. This change in emphasis is perhaps most dramatically expressed by John Maynard Keynes' statement "In the long run we are all dead."

Attention to the short-run operations of the economy has stressed, especially since World War I, the study of business cycles. Economists of the twentieth century, for the most part, agree that the classicists underestimated the influence exerted by money. Money may hinder rather than aid economic activity; it is often "out of order," sometimes in one way and sometimes in another. Monetary policy has significant effects upon the total volume of employment and output, upon the distribution of wealth and income among the members of the community, and thus upon the relative quantities and values of individual commodities produced and sold.

The economic disturbances following 1929 merely served to heighten interest in these problems and especially in the role of money in our economic life. Monetary policy reflects the changing interests and emphasis of monetary theory. Since contemporary analysis recognizes that money is an important factor in the operations of our economy, the effects exerted by money are not to be left to chance. Money is to be deliberately managed with a view to assisting, if not achieving, certain definite economic and social objectives. Currently the over-all objective of monetary policy is to aid in achieving high and relatively stable levels of income and employment.

When there is general unemployment of the factors of production, an expansion of the stock of money is employed to increase the purchasing power in the hands of the public. The additional purchasing power is sought as a means of creating a demand for the idle resources, thereby leading to an increase both in employment and in the output of goods and services. Conversely, in a period of full employment and rising prices a reduction in the money supply is called for in order to help prevent further upward pressure on prices.

Monetary policy assigns to money an ambitious role. But one must beware of overemphasizing the influence of money. The level of attainable output depends upon the resources of the nation, including its capital goods, the state of technology, the energy, intelligence, and skills of its labor force, the imagination and enterprise of its business management, and, especially, the wisdom of economic policies of its government. Monetary policy can help expand production and real wealth in a period of unemployment and can assist in maintaining high and stable levels of employment of men and machines. Wisdom in monetary policy, if it is to be fruitful, must be accompanied by wisdom in other economic policies. By itself, monetary policy affords no single or simple panacea for the regulation of economic life.

QUESTIONS AND PROBLEMS

1. In the summer of 1933 Robert Porterfield started the Barter Theater at Abingdon, Virginia. At that time 80 percent of the admissions were paid in produce or other goods.
 - a. Why was the plan instituted at that time?
 - b. How were the terms of the barter transactions set?
 - c. Why is a much smaller percentage of admissions today paid in goods?
 - d. Why has the plan not been used on Broadway?
2. Explain how the monetary unit serves as:
 - a. An index for business policies
 - b. A basis of family budgets
 - c. A guide to economic organization
3. Explain how each year in a private enterprise system productive energy is apportioned to creation of capital goods in contrast to consumer goods, in order to replenish and extend the supply of capital goods.
4. a. In 1951 expenditures for personal consumption by the American people were estimated at \$205 billion, whereas the average amount of coin and paper money and adjusted demand deposits was only around \$119 billion. Explain how this was possible.
 - b. Criticize the view that the volume of money (including both currency and bank demand deposits) in existence in a nation should equal the value of its existing wealth.
5. Point out the nature of the error involved in the position taken in each of the following statements:
 - a. Present day "mercantilists" still exult in a "favorable" balance of trade (excess of merchandise exports over imports).
 - b. Throughout American history there has been a strong movement to identify a plentiful supply of money with increased economic welfare, hence continuous complaint that our supply of money is insufficient.

6. "In the light of much current propaganda, it is worth while reiterating the fact that men and nations grow richer only through an increase in the useful goods that they own, either directly or indirectly." (F. C. James, *The Economics of Money, Credit and Banking*, 3d ed., New York, 1940, pp. 28-29.)
- Explain the significance of this statement for the student of money.
 - How do you reconcile your answer in (a) above with the fact that totalitarian propaganda attaches little if any significance to the volume of money and that such nations resort to direct methods of organizing economic activity?
 - Can money be made to aid the increase in riches mentioned in the quotation? How?

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CHAPTER 2

The Monetary System

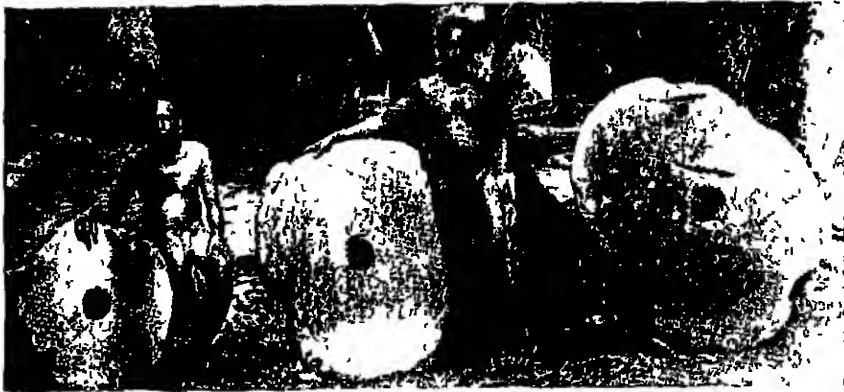
■ THE EVOLUTION OF MONEY

THE objects which have served as money are legion. Staple commodities like rice, salt, corn, and tobacco were among the earliest forms of money. Cattle, slaves, iron, and copper each also served as money. But gradually these earlier forms of money were supplanted by the precious metals. Gold and silver—compact, indestructible, divisible, and universally desired—offered a combination of qualities which made them ideally suitable to serve as money. Systems of coinage arose to save time and trouble in effecting payments; coinage permitted payment by count rather than by weight and made it easy to divide the metal into convenient units for making payments. For centuries gold and silver coin provided the world's monetary stock.

The next stage in the evolution of money took place when signed receipts *representing claims* to gold or silver began to be used as money. Beginning in the latter half of the eighteenth century, these paper forms consisting both of notes issued by commercial banks and of notes issued by governments began to displace on a substantial scale the large denomination coins in the monetary systems of the nations of the Western world. However, before paper money completely supplanted gold and silver coins, yet another stage in the history of money evolved. The check against a bank deposit was employed to effect payments between individuals and businesses. Toward the end of the nineteenth century checking accounts had

become the principal means of making payments both in the United States and Great Britain.

Gold coins circulated concurrently with other forms of money, although in decreasing quantities, in many western European coun-



Yap Stone Money



Swedish 8-Daler Coin



"Fugio Cent"—First United States Coin

FIGURE 1 EARLY MONEY

SOURCE: R. Wm. Kapp and Lore L. Kapp, *A Graphic Approach to Economics* (New York, 1951), p. 108. Reproduced from the Chase National Bank's Collection of Moneys of the World.

tries and in the United States up to World War I. After World War I measures to economize the use of gold led to the withdrawal of these coins from the circulating media of the western European nations. In the United States, however, gold coin continued to circulate as a part of the monetary stock until 1933 when they were withdrawn from circulation.

Throughout the history of money, with its shifts in relative emphasis from one form to another, the evolution has been in the

direction of separating money from any valuable money material. The long history of money is best viewed as an "almost unbroken evolution from commonplace, concrete, and simple forms to the representative, incorporeal, and abstract."¹ Gold and silver themselves are in a sense representative forms of money when compared to the earlier staple and directly consumable forms of money. Gold and silver coins can be viewed as metal tickets which are the means of acquiring goods and services which the people want. When paper money first came to be used, it was, strictly speaking, representative of a fixed quantity of gold or silver locked in the vaults of the issuer. Today a check is a claim to a more basic form—paper money—which the bank will pay on demand. The modern stock of money has increasingly less relation to the metallic gold stock, and money has tended to become increasingly abstract.

■ NEAR MONEY

Since the evolution of money has occurred in overlapping stages, the problem of defining what is money proper and what is merely a convenient *substitute* for money is an extremely difficult one to which there is no clear-cut answer. It is now recognized that it is a matter of more or less rather than of yes or no. Today some economists prefer to restrict the term money only to hand-to-hand forms of currency. Others define money to include both currency and demand deposits subject to withdrawal by check. Still others would add both time and savings deposits as well on the grounds that although banks have the right to require notice before withdrawal can be made from the account, the customary practice is to honor withdrawal on demand. But if time and savings deposits can be regarded as money, why should we not also include readily marketable short-term debts, such as United States Treasury bills and Treasury certificates and banker's acceptances, or even readily marketable long-term bonds?

Ultimately, where we draw the dividing line between what is money and what is not money is a matter of convenience. The generally accepted convention today, as we saw in Chapter 1, is to define as money anything which has a fixed price in terms of the unit of account and which is also generally acceptable by the community at that price. In other words, we count as money in the United States only those forms which have a constant price in terms of dollars and which generally can be used immediately as a means

¹ F. D. Graham and C. R. Whittlesey, *Golden Avalanche* (Princeton, 1939), p. 215

of making payments. By this definition only hand-to-hand currency and demand deposits are money proper.²

Those forms which are excluded from the stock of money by our definition of money can be stratified on the basis of their *nearness* to money. The criteria for measuring the moneyness of the many forms of near money which exist are (1) how constant is the price of a given asset in terms of the unit of account and (2) how quickly can it be converted into money. In the days when money consisted of only full-bodied coins, the principal forms of near money were articles which were made of the monetary metals. Today the dominant types of the near moneys other than time deposits at banks are short-term, highly marketable, debt instruments. Some of these are nearer to money than others or, in other words, are more liquid than others. Government Treasury bills, which are traded in a highly developed and continuous market and which also have the public's confidence in their price stability, are more liquid than long-term corporate bonds, which, for example, are subject to greater price fluctuations. Corporate stocks, which unlike bonds do not contain fixed contractual obligations to pay interest and principal at a specific date, are traded in more erratic markets and are even further removed from money.

Although we have excluded near moneys from our definition of money proper, they play an important role in all spheres in which money is important. We cannot exclude near moneys in an analysis of the factors affecting economic activity. When the community, for example, holds a large volume of near money, it may have less need for holding money proper and may, therefore, spend its money on goods and services, thus increasing the demand for currently available supplies of these goods and services over what would have been demanded if there were no near money in the economic system. The presence of a large volume of near moneys makes the problem of monetary management more difficult.

■ CIRCULATORY DEVICES

The definition of money is not the only problem which arises from the fact that the evolution of money has taken place in overlapping stages. When there is more than one type of

² Even today checks are not universally usable as money. But in the United States and Great Britain their acceptability is so wide that it makes more sense to include demand deposits in the monetary stock rather than to exclude them. In many foreign countries checks are so rarely accepted that demand deposits cannot be included as money proper.

money in circulation, numerous issues arise in connection with coordination of the different forms of money.

How can the various forms of money be kept in circulation at par or a fixed ratio of exchange so as to provide a homogeneous monetary system? It should be evident that when a commodity money is employed, the bullion content should not be saleable for a price above the face value of the coin as people will take the coin out of circulation and melt it down. In the event the entire stock of money consists of paper with the same legal tender power the different types of paper money would never depreciate relative to one another.

History is full of examples which show that merely expressing the various forms of money in terms of a common unit of account does not ensure that the public will continue to treat all forms of money in the same way. These historical illustrations lie behind the adage "that bad money drives out good money." This ancient truth was recognized as early as the fifth century B.C. in Aristophanes' *Frogs* and was formulated by Sir Thomas Gresham during the reign of Queen Elizabeth into a proposition now known as *Gresham's Law*.

The operation of the "law" is as follows: Where two or more forms of money of the same nominal or face value (in terms of the unit of account) are in concurrent circulation and if one is relatively overvalued for monetary purposes, the self-interest of the public (the banking and financial community in particular) will lead them to discriminate between the two forms. The undervalued form will be retained, and the overvalued form will be passed along to others in payment for goods or debts. In time the form of money which is undervalued for monetary purposes will disappear from circulation. The loose popular formulation of the law that "bad money drives out good money" should be restated that bad (overvalued) money is attracted into monetary use and good (undervalued) money into nonmonetary use.

Many complicated developments are possible if the community is in a position to refuse to accept the bad money (overvalued for monetary purposes). With the good money (undervalued for monetary purposes) being hoarded and bad money not accepted, the stock of money will not suffice to meet the public's monetary requirements. If these conditions prevail, the good money will not disappear but will continue to circulate *at a premium*. In order to prevent different forms of money with the same face value from circulating some at a premium and others at a discount, certain regulatory devices become necessary.

A second and related problem also calling for regulatory devices by the monetary authority arises when more than one form of money exists. When most contracts involving future payments call for payments in money but do not specify the type of money, a dispute may arise between debtor and creditor over the type of money which is acceptable to the creditor.

REDEMPTION AND BACKING

To ensure concurrent circulation at face value of different forms of money, it is imperative that the public is assured that there is no advantage of one form of money over any other. In other words, it is the duty of the monetary authority to see that no "bad" money exists in the economic system. To achieve this end, governments have used the device of redemption. At any one time in a given phase of monetary history, one form of money is the standard form. Standard money refers to that money with which the monetary authority can meet its ultimate obligations. Redemption refers to the willingness and ability of the monetary authority to pay out standard money dollar for dollar in exchange for any other form of money whose circulation it wishes to ensure. So long as redemption facilities exist, all forms of money are on a parity with the standard and hence with each other. In this manner the operations of Gresham's Law are avoided.

But the redemption feature in its narrow sense of conversion of all forms of money into the standard does not provide the whole solution of maintaining diverse forms of money in concurrent circulation at par. The public must be confident not only that each form of money is convertible, but also that it will continue to be convertible, dollar for dollar, into standard money. The confidence in the future of each form of money has been achieved in the past by regulations requiring that adequate reserves and adequate backing be maintained by the issuing body against all forms of currency in circulation so that the public is convinced that its money balances can continue to be exchangeable. To achieve and maintain the public's confidence in demand deposits, the principal form of money in our country, a vast network of regulations have been devised to assure the solvency of our banks.

LEGAL TENDER

The second problem, that of averting conflict over the kinds and quality of the money tendered in payment by a debtor to a creditor and thus ensuring that business may be conducted with

dispatch and certainty, has been resolved by means of a legal regulatory device—legal tender.

Legal tender is an attribute granted to money by law. The law stipulates that certain types of money serve as valid payment of all debts provided no agreement or contract exists to the contrary. A precise definition is automatically provided regarding the manner of payment for all contracts involving payments in money. Trade is thereby facilitated. Should a creditor refuse to accept "legal-tender" money offered to him by a debtor, the debt itself is not canceled. However, the creditor loses his right to receive interest from the date the payment was tendered and refused. Moreover, the creditor loses the right to sue the debtor for damages arising from nonpayment.

Until 1933 the various currencies in circulation had differing degrees of legal-tender power. Gold coin and certificates and, except where otherwise expressly stipulated, silver dollars, and Treasury notes of 1890 had unlimited legal-tender power. Greenbacks, too, possessed the same power except that they were not legal tender in payment of interest on the public debt. Silver certificates, Federal Reserve bank notes, Federal Reserve notes, and national bank notes possessed no general legal-tender power, but they were an acceptable form in which to pay all classes of public dues. Fractional silver and minor coins were limited in their legal-tender power to a total of \$10 and 25 cents respectively. Since May 12 and June 5, 1933, all distinctions as to the legal-tender power ascribed to the various coins and currencies of the United States were removed, and equal legal-tender power was granted as follows:

All coins and currencies of the United States (including Federal Reserve notes and circulating notes of Federal Reserve banks and national banking associations) heretofore or hereafter coined or issued shall be legal tender for all debts, public and private, public charges, taxes, duties and dues, except that gold coin when below the standard weight and limit of tolerance provided by law for the single piece, shall be legal tender only at valuations in proportion to their actual weight.

It should be noted that checking deposits are still not legal tender, although the banks are obligated to redeem them on demand in legal-tender money. Lack of legal-tender power reduces the general acceptability of bank deposits only in periods when confidence is lacking in the banks' ability to redeem their debts.

The term "lawful" money is often used and must be distinguished from legal tender. Lawful money is the form or forms of money which a particular law states may be used for a certain purpose.

What is lawful money for one purpose is not necessarily lawful money for another. Thus, Federal Reserve notes, although legal tender for all debts, public and private, are not lawful money for use as reserves of the Federal Reserve banks.

■ FORMS OF MONEY

The past quarter of a century has witnessed a continuation of the evolution of money from its commodity status to an abstract status where debts are used as the means of payment. Our present monetary stock consists of both metallic and paper forms. In order to understand more clearly the various kinds of money, Table 1 contains a comprehensive classification of the diverse forms of money particularly applicable to modern times.

TABLE 1
CLASSES OF MONEY

Issuer	Form	
	Coin	Paper
Government	Full-bodied (standard)	Representative full-bodied
	Token (subsidiary)	Representative token Circulating notes
Banks		
Central		Circulating notes
Other		Circulating notes Demand deposits (checking accounts)

FULL-BODIED MONEY

Full-bodied money is money whose value as a commodity for nonmonetary purposes is equal to its value as money. Many of the earlier commodity moneys, such as rice and cattle, were as valuable when used as commodities as they were when employed as money. In modern times the chief full-bodied moneys have been coins made of the standard metal that is employed when a country is on a metallic (gold, silver, or bimetallic) standard.

Full-bodied coins usually exist when there is an unrestricted and virtually costless flow of the metals into and out of the monetary

system. *Free* coinage exists when anyone may take the standard metal to the mint and have it coined; it is also *unlimited* when no restrictions are placed on the amount. The coinage is *gratuitous* when the government does not impose a charge for coining the metal.³ A charge which just covers the cost of minting (as has usually been the case on the continent of Europe) is termed *brassage*, while one which exceeds the cost of minting coins is termed *seignorage*. Where a charge is made for coinage, the market value of the material in a coin can fall below its monetary value by the amount of the charge. If the monetary value of an ounce of gold is \$35 and the cost of coining the ounce is \$2, then the market price of an ounce of gold can remain at \$33 without a shift of gold from the market to the mint.

The self-interest of individuals will lead them to employ the metal in the more valuable use, either redeeming money in the metal and using the metal in industry or withdrawing metal from industry in order to obtain money. Thus, the value of full-bodied coins as money and the value of their bullion content as a commodity are kept equal. For example, if the gold contained in full-bodied coins were worth more as a commodity than as money, people would melt coins and sell them as bullion. This would reduce the supply of money and increase the supply of gold as a commodity; the money value (purchasing power) of gold coins would rise and the value of gold as a commodity would fall until the value of gold in monetary and in commodity uses was equal. Conversely, if gold became worth more as money than as a commodity, the metal would be taken to the mint and less would be available for use as a commodity. The value of gold as money would decline and the value of gold as a commodity would rise until the value of gold in either use was equalized. In summary, the flow of gold out of the mint into industry prevents the value of money from falling below the value of the metal for other uses while the flow of gold into the mint prevents the value of money from rising above the value of the metal in other uses.

Full-bodied money is a rarity in modern monetary systems. Despite the disappearance of such money, many people still view full-bodied money as superior to other types of money. This attitude undoubtedly arises from the feeling that full-bodied money can be shifted to nonmonetary uses without a loss in value. The value of any metal depends on its supply and demand. The aggregate demand for the

³ Other than for assaying or testing the fineness of the bullion before melting, removing the impurities and base metals, and adding the copper alloy to give greater durability.

metal consists of (1) the (monetary) demand for it for use as money and (2) the (nonmonetary) demand for it in other uses. If we assume the metal to be gold, it should be readily apparent that the major part of the demand for gold stems from its use as money. Therefore, the nonmonetary demand for gold is far less important than the monetary demand in determining the value of gold. While small amounts of full-bodied money may be shifted to nonmonetary uses without a loss of value, a large-scale attempt to convert coin into bullion for other than monetary uses is likely to lead to a reduction in the value of the metal. For example, if all nations were to demonetize gold and offer it on the market as a commodity, its value would fall. This is perhaps best illustrated by the decline in the value of silver since the latter part of the nineteenth century when most nations demonetized silver and sold it as a commodity.

As was mentioned earlier, the coinage of gold was discontinued in most European countries in 1914. In the United States gold continued to be coined in most of the interwar period. In 1933, however, individual holdings of gold coin were restricted, and later in the same year all gold was called in by the government. In that year gold coinage was discontinued, and since 1934 no full-bodied money has circulated in the United States.

REPRESENTATIVE FULL-BODIED MONEY

Representative full-bodied money is a form of paper money which is a warehouse receipt for full-bodied coin or its bullion equivalent held by the government. Prior to March 1933 an individual in the United States could deposit gold coin or bullion with the Treasury and receive in return gold certificates of an equal amount. The gold deposited by the individual was really owned by the holder of the certificate; the government merely acted as warehouseman. The paper money (gold certificates in the above illustration) has no commodity value of its own but represents and circulates the full-bodied money or its bullion equivalent. Representative full-bodied money offers the advantages of full-bodied money without the expense of coinage and avoids the wear and tear arising from handling full-bodied money.⁴

The gold certificates comprising part of the money supply in the United States before their recall from circulation in 1933 represented the equivalent amount of gold coin or bullion stored in the Treasury and payable to the holder on demand. The case of a holder of gold

⁴ The savings arising from the elimination of coinage are offset to some extent by the cost of providing the representative (paper) money.

certificates who sued for the right to get \$1.69 in devalued currency for each \$1 in gold certificates he held was decided by the Supreme Court in 1935.⁵ There is no longer any representative money in this country since the court's decision stated:

Gold certificates . . . were required to be issued in denominations of dollars and called for the payment of dollars. . . . Being currency and constituting legal tender, it is entirely inadmissible to regard the gold certificates as warehouse receipts. . . . They were not contracts for a certain quantity of gold as a commodity. They called for dollars, not bullion.⁶

At the present time there exists a new type of gold certificate held by the Federal Reserve banks. These certificates are issued to the Federal Reserve banks when they transfer gold to the Treasury. Such certificates are not, however, part of the currency in circulation since they are held only by the Reserve banks. Moreover, they may not be redeemed in bullion except at the discretion of the Treasury.

CREDIT MONEY

Credit money is any money other than representative full-bodied money that has a money value greater than the market value of the material of which it is made. All the money in circulation in the United States today is credit money, and the same is true of almost all the moneys that circulate in other countries. The principal modern types of credit money are (1) token coins, (2) circulating notes (paper money), and (3) checking accounts.

Token Coins Token coins are those whose value as money is significantly greater than the value in the commodity markets of the materials from which they are made. In a real sense token coins are merely evidences of government debt printed on pieces of metal rather than on paper. Today all the United States circulating coins—the silver dollar, subsidiary silver (the half dollar, quarter, and dime), and minor coins (the nickel and cent)—are token coins. In June 1952 the market value of the silver contained in the silver dollar was about 71.1 cents and the value of the copper a small fraction of one cent more, making a total of slightly over 71 cents in all. The market value of the metal contained in subsidiary silver

⁵ Since the dollar was reduced to 59.06 percent of its former metallic content, the certificate holder desired to obtain the equivalent in devalued dollars, which he calculated by dividing the old 100-percent dollar by the new 59.06-percent dollar. It was on the basis of this reckoning that he claimed he was entitled to \$1.69 in devalued currency.

⁶ *Nortz v. United States*, 294 U.S. 317 (1935).

and token coins was even lower relative to their monetary value.⁷

Why are people willing to accept these coins at money values greatly in excess of the value of the materials out of which they are made? There are at least three reasons why these coins circulate at money values in excess of the value of the commodities contained in them.

1. The stock of token coins is deliberately limited by the government. Coinage of token coins is *limited* not *free*. The difference between the market cost of the materials contained in the coin and the monetary value of the coin yields a monopoly profit to the government. Token coins are not issued to provide profits for the government. The amount of such coins introduced into circulation is determined by the mint authority's judgment of the needs of the community for token coins.

2. In order to ensure that token coins will circulate at a parity with other types of money, the government permits redemption of the coins, at the will of the holder, into other forms of money. Since token coins are freely interchangeable with other forms of money, they are maintained at a parity with them.

3. Token coins are granted legal-tender power. Thus, the government decrees that creditors are bound to accept them in payment of debt.⁸

Representative Token Money Representative token money is in effect a circulating warehouse receipt for token coins or their bullion equivalent held by the government. In form it is similar to a certificate representing full-bodied money. However, unlike representative full-bodied money, the coin or bullion held as backing is worth less as a commodity than as money. In the United States the *silver*

⁷ TABLE 2

METALLIC CONTENT OF COINS OF THE UNITED STATES

Coin	Total weight (grains)	Composition	
		Principal metal	Alloy
Dollar	412.5	90% silver	10% copper
Half dollar	192.9	90% silver	10% copper
Quarter	96.45	90% silver	10% copper
Dime	38.53	90% silver	10% copper
Nickel	77.16	75% copper	25% nickel
Cent	48.0	95% copper	5% tin & zinc

⁸ Token coins may be granted limited legal power. In the United States until 1999 pennies had legal-tender power up to payments of twenty-five cents. Since 1933 all token coins have unlimited legal-tender power in this country.

certificate, which provides the bulk of our one dollar bills, is the best illustration of representative token money. Silver certificates are issued against the deposit of silver dollars by individuals or against purchase of silver by the government. These silver certificates are convertible into silver dollars on demand.

Most economists question the monetary advantage of issuing paper money backed by silver having a market value far below its monetary value. Paper currency without specific backing would be equally satisfactory in providing a means of payment. It must be recognized that the use of silver certificates in the United States reflects the political activity of silver producers in improving the market for their product. Silver certificates were first issued to circulate silver the government was required to buy under the Bland Allison Act of 1878.⁹ They are now issued against silver purchased under the Silver Purchase Act of June 19, 1934, mentioned in Chapter 3.

Circulating Notes *Circulating notes issued by governments* either carry the government's promise to redeem them on demand in other types of money or are simply noninterest-bearing debt of the government stated in monetary units, that is, one dollar, five dollars, etc. The latter type of circulating note is often described as *fiat money* because they entail no promise of redemption but circulate because the government decrees that they are money.

The only form of circulating note issued by the United States Government which is still in circulation is the United States note or, as it is sometimes called, the "greenback." Issued in 1862 to help finance the Civil War, greenbacks were at first fiat money, and some \$450 million were put into circulation. By 1878 the amount outstanding was reduced to \$347 million, and as of January 1, 1879, the United States note was made redeemable in gold. The Gold Standard Act of 1900 provided for a separate gold reserve of \$156 million to serve as backing for these notes and the remaining Treasury notes of 1890.¹⁰

Circulating notes issued by central banks, as the Federal Reserve banks, the Bank of England, and others, account for a large fraction of the hand-to-hand money used in most advanced countries today. *Federal Reserve notes* are issued by the twelve Federal Reserve banks

⁹ Treasury notes of 1890, secured by the silver purchased under the Sherman Silver Purchase Act of 1890 and issued under the terms of the act are similar to silver certificates. The act was repealed in 1893, and there are now only one million dollars of Treasury notes of 1890 outstanding, most of these are believed either lost, destroyed or in the hands of collectors.

¹⁰ The Thomas Amendment to the Agricultural Adjustment Act of May 12, 1933, authorized the President to issue enough additional United States notes to bring the total outstanding at any one time to \$3 billion. This power was never used and was revoked on June 12, 1935.

and are also direct obligations of the United States Government. The notes are fully backed by collateral consisting of 25 percent in (new-style, noncirculating) gold certificates¹¹ and the balance either in commercial paper that is eligible for rediscount with the Reserve banks or direct United States Government obligations. These notes were designed to provide an elastic currency, that is, a currency which increased and decreased in quantity with increases or decreases in the volume of business. Elasticity of the stock of currency was sought by tying Federal Reserve note issues to collateral which varied directly with the level of business activity. When business was brisk, commercial banks would augment their lending power by rediscounting commercial paper with the Federal Reserve banks. The Reserve banks, in turn, would have a larger stock of commercial paper and could issue more Federal Reserve notes. Conversely, when business activity was at a low ebb, less currency would be needed, and business firms would repay their debts to the commercial banks. The inflow of currency would enable the commercial banks to reduce their rediscounts (borrowing) with the Reserve banks. The latter, in turn, would have less commercial paper as backing for Federal Reserve notes and would issue fewer notes; in addition, the Reserve banks would not reissue (that is, would retire) notes that they received.

The Federal Reserve Act of 1913 also made provision for the issue of *Federal Reserve bank notes*. The law originally required that the collateral for these notes would be certain specially designated issues of United States Government bonds "bearing the circulation privilege" and a 5-percent redemption fund. These notes were used on only three occasions and are now in the process of being retired. Under the Pittman Act of 1918 provision was made for the retirement of silver certificates so that the silver backing could be shipped to India; Federal Reserve bank notes were issued to replace the silver certificates withdrawn from the money supply. Under the Emergency Banking Act of March 9, 1933, Federal Reserve bank notes were issued to give assurance that frightened depositors in reopened banks would be able to secure hand-to-hand money. These notes could be issued up to 100 percent against government bonds and 90 percent against other types of paper held by the Reserve banks. In December 1942, in order to conserve paper, the printed stock of Federal Reserve bank notes on hand was issued. The Reserve banks immediately provided the Treasury with an equivalent amount of funds to retire this issue, and the Federal Reserve

¹¹ Prior to June 12, 1945, the reserve in gold certificates was 40 percent. Before 1932 the nongold collateral consisted solely of eligible paper.

bank note became Treasury currency, that is, a debt of the Treasury not the Reserve bank. On June 12, 1945, authority for emergency issue of such notes was terminated.

Circulating notes *issued by banks other than central banks* are still used extensively in some countries, and at one time they played an important role in the United States. Prior to the Civil War notes issued by the First and Second Banks of the United States and by state-chartered banks provided the larger part of the circulating medium. From the post-Civil War days of 1865, when state bank notes were driven out of circulation by the federal government, until 1935 national bank notes issued by banks chartered by the federal government comprised a portion of the money supply. Like the Federal Reserve bank notes national bank notes were originally backed fully by certain designated issues of United States Government bonds and a 5-percent redemption fund. Since they were backed by government debt which was reduced in prosperity and increased in depressions, national bank notes were widely criticized as being inelastic. Their quantity was reduced in prosperity when more currency was needed and vice versa. The framers of the Federal Reserve Act anticipated that the Federal Reserve note would replace the national bank note. From 1932 to 1935, in order to allay the public's fear of the banks, the monetary authorities wanted to increase the stock of currency, and Congress passed legislation permitting greater issues of national bank notes by making all United States Government bonds paying up to 3½ percent interest temporarily eligible as collateral for these notes. In 1935 this provision lapsed, and part of the profits from devaluation of the dollar was used by the Treasury to pay off and retire the regular bonds which served as collateral for national bank notes. Those banks whose notes were outstanding gave the Treasury an equivalent amount of funds; the outstanding notes are now Treasury currency and are being retired.

Checking Account Deposits The forms of coin and paper money listed above are hand-to-hand or, as sometimes described, pocket money; these continue to circulate outside the banks until they become worn. But the major part of the monetary stock of the United States, as well as of most advanced countries has come within the last century or less to be in the form of demand deposits at commercial banks. Demand deposits are bank liabilities (debts) arising out of receipt by a bank of a consideration from its customers. These debts must be paid by the bank as the creditor orders in his check or order to pay. The depositor may ask for payment in coin or paper money, in which case he is exchanging one form of money for another. The depositor may name another depositor in the bank

as the payee on his check or may name another person not carrying an account with the bank as the payee. The balance is transferred from one account to another on the books of the bank by means of the check or order to pay.

By honoring checks drawn upon it to the full amount of its contractual liability, a bank assures that its demand liabilities will be a part of the total stock of money. It ensures the convertibility of demand deposits at a fixed price with other parts of the monetary stock. Moreover, it makes checks acceptable as a means of payment in a variety of transactions.

Certain advantages have favored the widespread use of checking accounts as a means of payment. They involve less risk of loss or theft than do other forms of money. Checks can be drawn for the exact amount of the payment, hence obviating the need for making change. Regardless of the amount or the distance involved, checks can be transported easily. When endorsed by the payee, the check serves as a receipt of payment. The chief disadvantage of checking accounts is that a check may not be accepted when given in payment to a person who does not know the drawer of the check. This disadvantage may be overcome by devices such as the certification of personal checks or the issue of cashier's or traveler's checks in place of personal checks. The great majority of checks change hands only once. The turnover occurs in the deposit accounts against which they are drawn, and the checks become merely a series of orders to the banks to adjust their books in accordance with their depositors' wishes.

■ THE AMERICAN MONETARY SYSTEM

Money in the United States, as in most Western nations, now almost entirely consists of the debts of either governments or banks. Metallic small change supplements the stock of debt money and is used primarily to make change. Table 3 examines the components of the stock of money in the United States at the end of 1951.¹²

An examination of the table reveals the following:

1. The entire monetary stock is composed of credit money. There is no full-bodied money in circulation, and the \$38 million of representative full-bodied money (gold certificates) has either

¹² Unlike Great Britain, the United States uses a decimal system whereby the secondary units are multiples or fractions (varying down to the uncolned mill) of the dollar (the primary unit of account).

TABLE 3

MONEY IN CIRCULATION IN THE UNITED STATES, DECEMBER 31, 1951^a
(In millions of dollars)

A. Types	B. Denominations of hand-to-hand money				
	Small denominations			Large denominations	
	Coin	1 cent, 5 cents	\$ 392	\$	\$ 2,544
Government					
Full-bodied					
Representative full-bodied (gold certificates)		10 cents		100	5,207
Token coins		25 cents	1,073	500	911
Silver dollars		50 cents	189	1,000	
Subsidiary silver (10, 25, 50 cents)		Silver dollars	\$1,654	5,000	16
Minor coins (1, 5 cents)				10,000	
Representative token (silver certificates)				Total	\$ 8,678
Circulating notes (United States notes)					
Banks—central					
Circulating notes	Paper			Less unsorted	2
Federal Reserve notes	\$ 1	24,807	\$ 1,182		
Federal Reserve bank notes ^b	2	232	67		
Banks—other	5		2,120		
National bank notes ^b	10	79	6,329		
Total hand-to-hand	20	\$ 29,206 ^c	9,178		
Demand deposits—adjusted ^d		98,234	\$18,876		
Grand Total		\$127,440		Grand Total	\$29,206

^a The figures for coin and paper money show the amounts outside the Treasury and the Federal Reserve banks. The term "in circulation" represents the amounts issued less the amounts redeemed. The amount of coin and paper money in "actual" circulation is smaller than the figure reported above as part of the total is undoubtedly destroyed, part is in foreign countries, and another part is in the vaults of the banks.

^b Actually now the liability of the Treasury or Treasury currency.

^c Of this sum \$2,903 was held by banks other than Federal Reserve banks, leaving \$26,303 in circulation outside banks.

^d Demand deposits exclusive of interbank and United States Government deposits less cash items reported in the process of collection.

been destroyed or is hoarded since, from 1934 on, it may not legally circulate.

2. Over three fourths of the total money in circulation consists of checking accounts. In order to measure the volume of checking accounts available to the general public, the concept of "adjusted" demand deposits is in general use. The figures for gross (unadjusted) demand deposits is unsuitable as a measure of the general public's checking accounts because it includes (1) demand deposits owned by the United States Government and (2) demand deposits owned by banks, that is, interbank deposits. Neither of these items is available to the community as money. Another factor which is included in the gross figure but which must be adjusted for arises from banking practice. Often the account of a person depositing a check is credited a day or two before the account of the person who wrote the check is debited. Therefore, the gross figure includes double counting by including cash items that are in the process of collection. Adjusted demand deposits excludes these three factors and thus provides a more accurate measure of the community's money supply than gross demand deposits.
3. Of the hand-to-hand forms, about five sixths consists of Federal Reserve notes. Both Federal Reserve bank notes and national bank notes are in process of being retired. The banks which originally issued them have deposited funds with the Treasury to pay them off, and they have now become obligations of the Treasury.
4. Coins are used for small change and comprise a small fraction (5 percent) of the total hand-to-hand forms of money.
5. Two thirds of the coin and paper money consists of small denominations (\$20 or less).

The three elements in the monetary system are (1) the government represented by the Treasury, (2) the central bank represented by the twelve Federal Reserve banks under the direction of the Board of Governors of the Federal Reserve System, and (3) the commercial banks consisting of over 14,000 private corporations operating under charters granted by either the federal or state governments.

Coins are the liability of the Treasury, paper money is the liability of either the Reserve banks (Federal Reserve notes) or the Treasury (Treasury currency), and deposits are the liability of the commercial banks. Of the \$127.4 billion of money in circulation at the end of 1951, Federal Reserve notes accounted for \$24.8 billion and checking accounts in banks other than Federal Reserve banks amounted

to \$98.2 billion. It is evident that both classes of banks dominate fluctuations in the monetary stock and thereby influence money income, price levels, and employment. The fact that Treasury currency amounted to \$4.4 billion may lead to the mistaken impression that the government plays a minor role in affecting the stock of money. Actually, the government occupies a strategic position in the determination of the stock of money in at least two ways. For one thing, the government holds the metallic reserves¹⁸ of the country on the basis of which money is issued. Equally important is the fact that the government exercises control over the Federal Reserve banks and commercial banks which account for the largest fraction of our total monetary stock.

The three agencies responsible for the monetary system do not attempt to regulate the relative proportions of deposits and hand-to-hand money in the monetary stock. The money-using public determines the composition of its money balances. The Federal Reserve banks, on behalf of the Treasury, provide hand-to-hand money or currency to the nation and remove that currency when it becomes either unfit for further circulation or excessive in amount. In the process the member banks act as intermediaries between the Reserve banks and the public.

If the public holds more coin and paper currency relative to demand deposits than it has need for, the commercial banks will accept the excess and create new demand deposits in exchange for it. If the public desires more coin and paper currency, the banks must be prepared to meet deposit withdrawals by paying out currency. In the event the commercial banks' own stocks of currency fall to dangerously low levels, additional currency can be obtained from the Federal Reserve banks. Federal Reserve notes or Treasury currency and coin are shipped to member banks by the Reserve banks which charge the reserve accounts of the member banks. The Federal Reserve banks' stock of currency can be restored. If Treasury currency held by the Reserve banks runs low, the Reserve banks order additional amounts and create a deposit to the credit of the Treasury; the Reserve banks may obtain additional Federal Reserve notes by depositing collateral to the face value of the new currency wanted with the Federal Reserve agent, who then releases the new currency.

If commercial banks accumulate excess stocks of currency, they may return as much as they wish to the Federal Reserve banks. The latter will retire the Federal Reserve notes; Treasury currency will be held or returned to the Treasury for retirement. The process

¹⁸ \$22.7 billion of gold bullion and \$2.4 billion of silver, of which one eighth was in the form of coined silver dollars.

by which the monetary system absorbs or releases currency as the public chooses is graphically depicted in Figure 2.

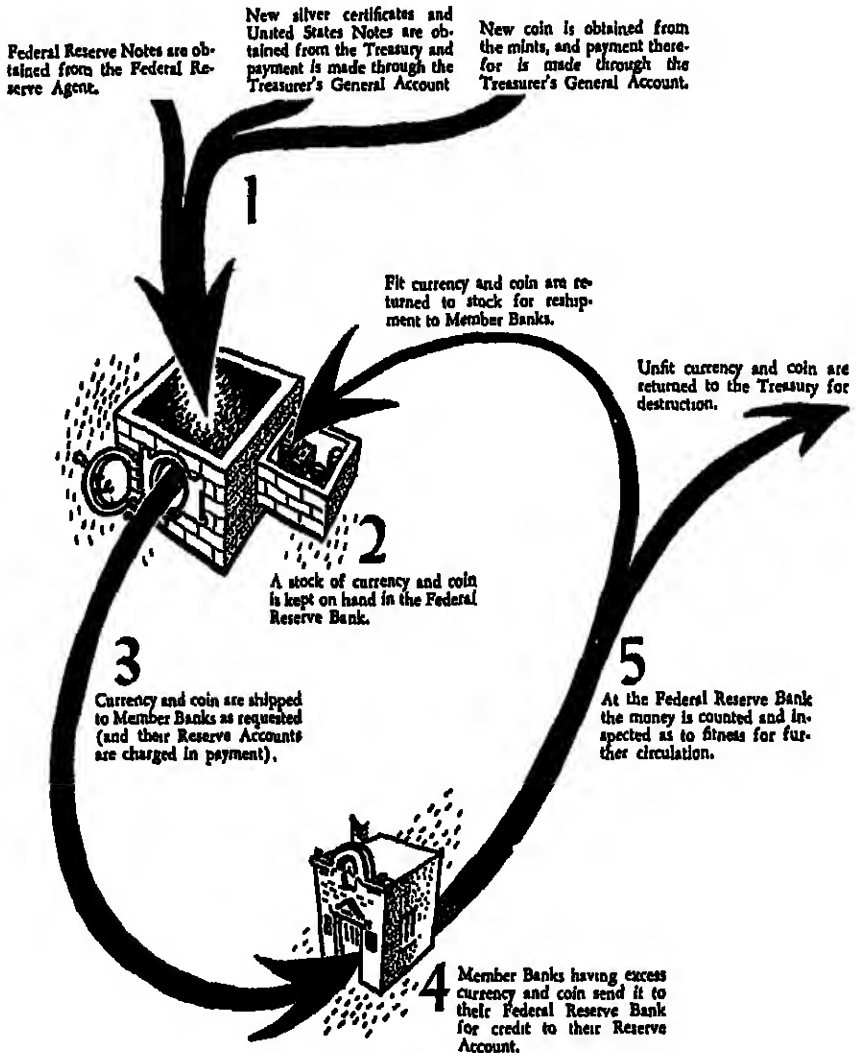


FIGURE 2 MOVEMENT OF CURRENCY AND COIN

SOURCE. Federal Reserve Bank of Chicago.

QUESTIONS AND PROBLEMS

1. A contemporary account stated that "the tobacco warehouses, of which there are a number in Virginia, are under the direction of public authority. There are inspectors, nominated to prove the quality

of the tobacco brought by the planters, and if found good, they give a receipt for the quantity. The tobacco may then be considered as sold, those authenticated receipts circulating as money in the country. For example, suppose I have deposited 20 hogsheds of tobacco in Petersburg, I may go fifty leagues thence to Alexandria or Fredericksburg and buy horses, clothes, or any other article with those receipts, which circulate through a number of hands before they reach the merchant who purchases the tobacco for exportation."

- a. Why was tobacco employed as money in colonial Virginia? Why were warehouse receipts used instead of the tobacco itself?
 - b. Why under the Federal Reserve System can tobacco in a warehouse successfully be made the basis of Federal Reserve notes for monetary circulation, whereas the tobacco warehouse receipt money of colonial Virginia was not successful?
2. "Throughout history there has been a persistent effort to reduce the cost, to the issuer at least, of the material from which money is made. The final stage is that in which the issuer not only pays practically nothing for the money material but does not assume even a future obligation in the matter." (F. D. Graham and C. R. Whittlesey, *Golden Avalanche*, Princeton, 1939, p. 221.) Explain.
3. Deposits and Currency, at close of selected years (in millions of dollars).

Year	Total	Demand Deposits Adjusted, All Banks	Currency in Circulation Outside Banks
1929	26,366	22,809	3,557
1932	20,397	15,728	4,669
1940	42,270	34,945	7,325
1945	102,341	75,851	26,490
19			

- a. Complete the above table by supplying figures for June 30 or December 31 of last year. The data can be obtained from the table entitled "Consolidated Condition Statement for Banks and the Monetary System—Deposits and Currency" which appears monthly in the *Federal Reserve Bulletin*.
 - b. Give the reasons for the diverse trends of deposits and currency between 1929 and 1932.
 - c. Explain the reasons for the increase in both between 1932 and 1940.
 - d. Why was the rate and amount of increase of the total between 1940 and 1945 greater than the increase between 1932 and 1940?
 - e. How do you explain the more rapid rate of increase in currency in circulation between 1940 and 1945 than in deposits over the same period?
4. Currency in circulation outside Treasury and Federal Reserve banks at close of selected years (in millions of dollars).

	1929	1932	1940	1945	19
Gold coin	97	181			
Gold certificates	880	601	61	51	
Silver dollars	42	29	60	136	
Silver certificates	417	371	1,733	1,873	
Treasury notes of 1890	1	1	1		
Subsidiary silver	294	258	481	832	
Minor coins	119	113	209	307	
U. S. notes	265	294	313	316	
Federal Reserve notes	1,862	2,716	8,138	24,388	
Federal Reserve bank notes	3	3	19	494	
National bank notes	597	820	144	117	
Total	4,578	5,388	11,159	28,515	

Currency in circulation as shown in the table includes currency in hands of banks other than Federal Reserve banks.

- a. Complete the above table by supplying figures for June 30 or December 31 of last year. The data can be obtained from the table entitled "U. S. Money, Outstanding and in Circulation, by kinds" which appears monthly in the *Federal Reserve Bulletin*.
 - b. Characterize briefly each kind of money in the monetary system of the United States as shown in the foregoing table. Indicate the source (issuer) and "backing" of each kind.
 - c. What evidence is there in the table that our monetary system "can be explained only in terms of a long series of historical events"?
 - d. Using the table, indicate the extent to which the monetary supply is not a governmental function. Indicate the extent to which the supply is a function of debt.
 - e. Evaluate the currency system in terms of your concept of a desirable system.
5. Article I, section 8 of the Constitution provides that "The Congress shall have Power . . . To coin Money, regulate the Value thereof, and of foreign Coin." Section 10 provides that "no State shall . . . coin Money . . . make any Thing but gold and silver Coin a Tender in Payment of debts."
- a. What is the historical reason why coinage was made a governmental monopoly?
 - b. What are the ways in which the government can "regulate the value" of money?
 - c. In what ways does the surrender by the states to the federal government of the right of coinage facilitate trade?
6. a. Explain why bank notes possessed no general legal-tender power in the United States before 1933.
- b. Why do bank checks not have the legal-tender power?
7. a. Why should a time or savings deposit in a bank be termed "near money"? Is the reason the same for a United States Government bond?

- b. What relation do the organized stock exchanges bear to the supply of near money?
8. Contrast the parts played by the government, the Federal Reserve banks and the member banks in supplying money to the people.

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CHAPTER 3

Monetary Standards

CHAPTER 2 described the different forms of money that comprise the actual circulating means of payment and the devices by which they are kept in circulation concurrently at face value. The present chapter examines monetary standards and seeks to explain the relationship between the standard money and the other components of the stock of money.

Standard money is money in which even the monetary authority is "entitled to make a final and ultimate discharge of its obligations, including the obligation to convert convertible money."¹ If convertibility into what was standard money is abolished, previously convertible money becomes standard money. Standard money does not necessarily circulate as a part of the monetary media used to effect payments.

The unit of standard money named by the state is, as a rule, the money of account in which exchange values of goods and services are expressed as prices. The money (unit) of account may have the same designation for many years while the standard money embodying it is subject to change. The unit of account (the dollar) has been embodied in many different kinds of standard money according to the different monetary standards of the United States. The dollar was originally defined as 371.25 grains of silver or 24.75 grains of gold; later it was defined as 371.25 grains of silver or 23.22 grains of gold. In both cases a legal bimetallic standard was established. At a later date the dollar was defined only as 23.22 grains of gold, and the United States was legally on the gold standard.

¹ D. H. Robertson, *Money*, 4th ed. (New York, 1948), p. 45.

The unit of account has given continuity to the monetary system. Despite the various changes in the standard money, prices continue to be quoted and accounts kept in terms of the unit of account. Once the community becomes accustomed to the use of money, people make valuations in terms of the unit of account. The fact that a unit of money may be composed of or represents a fixed weight of one kind of metal or another rarely enters into the calculations of individuals unless they are engaged in foreign trade or foreign exchange operations.

The level of prices stated in terms of the money of account expresses the purchasing power of money. If the unit of account is to perform its function satisfactorily, it must be relatively constant in purchasing power. Whether units of account have been expressed in terms of gold, gold and silver, or inconvertible paper, they have demonstrated marked fluctuations in purchasing power. Therefore, one of the primary aims of monetary policy has been to provide stability in the general price level or, in other words, stability in the purchasing power of the unit of account.

There are numerous monetary standards, but in modern times the basic choice has been between a metallic standard and a paper standard. Under a monometallic standard the monetary unit (or unit of account) is defined as a fixed amount of one metal, usually either gold or silver, whereas under bimetallism it is defined as a fixed amount of two metals. Under an inconvertible paper standard, however, the standard money is not kept constant in terms of any metal.

The basically attractive feature of any commodity standard is the restraint it can impose on unwise political intervention. If the monetary standard is gold, the stock of money is limited by the quantity of gold which the monetary authority holds. While there may have been a time when the quantity of money was limited dollar for dollar to the monetary gold stock, this situation has not prevailed for centuries. The link between the monetary gold stock and the stock of money has become more and more tenuous. The monetary authorities have acquired increasing power to vary the monetary stock on the basis of a given stock of gold. However, even in its modified forms the gold stock does serve as a limiting factor in determining the quantity of money. When a country is on an inconvertible paper standard, the supply of metal imposes no limit upon the amount of money the monetary authority can issue. However, it does not necessarily follow that unlimited issues of money will take place. The monetary authority may restrict the quantity of money to an amount which it deems economically desirable.

Moreover, the legislature can pass appropriate legislation restricting the issuance of money by the monetary authority.

- The choice of a standard has engendered bitter controversy on frequent occasions. In the latter nineteenth century gold triumphed over bimetallism, silver being made subsidiary; gold became the virtually undisputed monetary standard until World War I. Most nations abandoned gold during that war and entered the postwar period with inconvertible paper standards. Since 1918 the debate over monetary standards has been many sided and almost continuous. Among the issues in dispute have been the following: What are the relative merits and shortcomings of gold and inconvertible paper standards? If gold is to be used, what shall be the form of the gold standard? Should the standard be largely automatic or deliberately managed? If the standard is to be managed, who should manage it? The controversy, both after World War I and again during and after the depression of the early 1930's, has emphasized the thought that the monetary standard must be suited to the general economic conditions of the time. Thus, for example, the gold standard as proposed and instituted in various nations in the 1920's showed marked differences from that which existed in the days prior to World War I.

■ GOLD STANDARD

It is a basic characteristic of the gold standard, as already noted, that the basic monetary unit, such as the dollar or pound, is in some degree kept at a constant value in terms of gold. Thus the value of the unit and the value of the defined weight of gold are kept at equality. But the gold standard has had various offshoots and has been subject to numerous modifications in practice. There have been differences as to the form of gold in which the circulating moneys of a nation are redeemable, the extent of the geographic area covered, and the degree of deliberate monetary management employed. We shall consider first the forms and then the functioning of the gold standard.

GOLD-COIN STANDARD

Under a gold-coin standard full-bodied gold coins are issued and constitute a part, although the lesser part, of the total circulating medium. To maintain both the unit of account and the circulating money constant in terms of gold, the following formal requisites must be met:

1. The gold value of the monetary unit must be defined. For many years prior to 1933 the dollar was defined as 25.8 grains of gold nine tenths fine (and one tenth alloy), hence as 23.22 grains of pure gold.

2. A free flow of gold must be permitted into and out of the monetary system as the self-interest of the public dictates. By providing unlimited coinage of gold at virtually no cost to the supplier of the metal, the value of the dollar is prevented from rising above the value of its gold content as a commodity. Thus, the minimum price of gold in the market place prior to 1933 was \$20.67 per fine ounce since one ounce of 480 grains could be coined into 20.67 dollars containing 23.22 grains each. By permitting free and unlimited melting of gold coin, the value of the dollar is prevented from falling in terms of gold so that the market price of gold cannot rise above the mint price. By "melting" is meant, strictly speaking, conversion to another use, such as hoarding, industrial purposes, or export. The combined result of these two provisions—coinage and melting—is to fix the value of the unit of account in terms of gold.

3. A free flow of gold into and out of the country must be allowed. Allowance of free import and export of gold equalizes the price of gold within the country with its price abroad.² If there were no free import of gold, the price of gold within the country could be above that of foreign gold. Conversely, if free export of gold did not exist, the price of gold in the country could be below that abroad. Hence, the value of the money of account could change in terms of foreign gold.

4. Free interconvertibility of gold money and all other kinds of money at par or face value must be maintained so as to equalize the values of all types of money in terms of one another. Thus, the other forms of money could neither depreciate nor appreciate in terms of gold. Under the gold-coin standard the government maintains reserves of gold money and gold for purposes of redemption; banks usually stand ready to redeem bank notes and checking account deposits, not directly convertible by the government into gold, either in gold money or in other government money that in turn is freely convertible into gold.³

² The difference between the domestic and the foreign price of gold is limited to the cost of shipment plus any seignorage charge.

³ The provision found in most gold-coin standard systems that gold in contrast to most other forms of money is given unlimited legal-tender power cannot be considered a prerequisite to the successful operation of the gold standard.

GOLD-BULLION STANDARD

The gold-coin standard largely disappeared after 1918. While the United States maintained such a standard, other major nations, whose currencies had been dislocated by war, returned to other forms of the gold standard. Prominent among them was the gold-bullion standard, to which the United States also shifted after 1934, when it also reduced the content of the dollar to 13.71 grains of pure gold.

While the four formal requisites of the gold-coin standard are in effect, the form which gold itself takes differs under the gold-bullion standard. Gold is no longer coined, and gold coins cease to circulate. The gold that the government (or central bank) purchases in unlimited amounts at a fixed price is held in its vault, and payment is made to the seller of gold in other forms of money. Other types of money can be converted at the will of the holder, not into gold coin but into gold bars of a specified minimum weight. Since the minimum-size bar, for example, in Great Britain in the 1920's was worth over \$7,500, this meant redemption of money in gold was permitted in larger but not in smaller amounts.

The gold-bullion standard seeks to economize the use of gold. Its advocates maintain that gold is not needed for circulation but is needed for industrial purposes and for foreign payments. The latter two needs are met by gold bars. Individual demand for small holdings of gold in time of crisis is likely to reflect hoarding or speculation and merely drains the government of its reserves. The nations desiring to return to gold after World War I feared a drain of gold that might reduce their reserves to such a point as to force undesired reductions in their total stock of money or to endanger their ability to provide gold for foreign payments. Under a gold-bullion standard there would be lessened danger of gold withdrawals and a decreased need for gold relative to the total money supply. The concentration of gold in the hands of central banks and governments would give the monetary authorities greater leeway in monetary management. To increase their power further, instead of selling gold bars freely for all purposes, some nations adopted a policy of selling gold only for "legitimate" industrial and export purposes, and the tests of legitimacy were often very strict. In the United States today export is permitted only to foreign central banks and governments. By placing restrictions upon the sale of gold bullion, monetary authorities restrict the automatic adjustments of the stock of money which result from individual decisions to buy or sell gold.

GOLD-EXCHANGE STANDARD

The gold-exchange standard seeks to give the nation which uses it the benefits of a gold standard without the expense of itself maintaining the necessary gold reserve. It therefore fixes the value of the unit of account, not directly in terms of gold, but in terms of a foreign currency, which in turn is fixed in gold. The local circulation does not include gold coin but consists of silver coin, paper money, and checking account deposits. The government maintains its reserves largely in the form of bank deposit balances and short-term securities in the foreign center. In effect, it redeems local currency in the foreign currency by selling part of these foreign balances at a fixed rate in terms of local currency. Thus, it provides not gold but its equivalent for purposes of foreign payments. Redemption (through sale of foreign balances) will occur when the local currency tends to depreciate because of an excess of imports over exports on current international account arising from net purchases abroad. Conversely, it replenishes its foreign balances by purchasing claims to the foreign currency from its citizens (and paying for them in local currency) or by selling in the foreign center claims to its local currency at home; such operations take place when there is an excess of exports over imports on current international account because its citizens have made net foreign sales.

The institution of a gold-exchange standard was a favorite proposal for reform of a backward nation's monetary system in the days before World War I. British India and the Philippines were two leading examples. After World War I various combatants were relatively impoverished and lacked gold. In seeking to restore their currencies, they held a substantial part of their central bank reserves as liquid balances with foreign banks, particularly in London, and were permitted to redeem their local money in this form. They were affected, therefore, by the monetary policies of the countries in which they kept balances. British abandonment of gold in 1931 under the pressure of foreign withdrawal of sterling balances and the resulting fall of the pound in terms of foreign currencies largely discredited the system, since foreign countries were able to redeem their balances in London only at a loss resulting from the lower price of sterling in terms of foreign currencies.

OPERATION OF A GOLD STANDARD

Prior to 1914 some form of gold standard was employed by virtually every commercially important nation. The stand-

ard was to a considerable degree automatic in its operation, rather than deliberately managed, and its regulatory action resulted largely from permitting gold movements to affect the size of a nation's monetary stock. The self-corrective regulatory influence exerted by gold flows has two aspects: the control of the money supply and the mutual alignment of the economic and financial situation in the several nations with that of each other. In analyzing these two aspects, we shall first assume that the government and the central bank both play a perfectly passive role.

Domestically, when a nation is on a gold standard, gold flows into and out of the monetary system automatically induce changes in its total stock of money. This is done by increasing and decreasing the size of the basic gold reserve.⁴ A flow of gold into the system automatically expands bank reserves and tends to induce a multiple expansion of checking deposits while an outflow of gold automatically reduces bank reserves and tends to force a multiple decrease of checking deposits. The tendency results from the existence of legal or customary fractional bank reserve requirements.⁵

Internationally, when every important nation keeps its monetary unit constant in terms of gold, certain results follow. First is the virtual stability of exchange rates of all the moneys tied to gold. This is true because the value of each monetary unit is fixed in terms of gold so that the values of the various units in terms of each other must be almost constant. When the British pound sterling contained 113 grains of pure gold and the American dollar 23.22 grains of pure gold, their exchange rate must have approximated the "mint parity" of \$4.8665 per £1. Any tendency for the pound to rise above \$4.8665 in the United States foreign exchange market by more than the cost of shipping 113 grains of gold from the United States to England would lead to gold shipments from the United States to England, which would tend to prevent any further rise in the dollar price of the pound. Conversely, any tendency for the pound to fall below \$4.8665 by an amount exceeding the cost of shipping 113 grains of gold from England to the United States would lead the United States to import gold in quantities sufficient to stop the decline in the dollar price of the pound. The importance of stable exchange rates, it is claimed, is that people can engage in international borrowing and lending as well as international buying and selling

⁴ If the money supply is composed exclusively of gold coin and gold certificates, changes in the stock of money would be equal to the changes in the gold stock. When the money supply consists of paper money and checking account deposits in addition to the gold coin and gold certificates, the change in the money supply would be some multiple of the gold flows.

⁵ See Chapter 6.

with little risk that exchange rates will fluctuate before the transaction is completed.

Second, under the international gold standard price levels in the various countries are closely related. Were the price of goods and services in terms of gold to be higher in one country than in others, the high-price country would be a good market in which to sell and a poor market in which to buy. Conversely, the low-price countries would be good markets in which to buy and poor markets in which to sell. Therefore, the high-price country would tend to buy abroad more than it sold abroad, and the other low-price countries would tend to sell more to it than they bought from it. As a result, gold would flow from the high-price to the low-price countries to settle balances in international payments. The flow of gold out of the high-price country would reduce its reserves and hence the stock of money and tend to lower price levels there, whereas the flow of gold into the low-price countries would tend to raise their price levels until price level relationships among the countries were brought into equilibrium.^a At such a level there is again equilibrium or balance in international payments, and gold flows cease. This equilibrium, it is claimed, is effected through the gold flows induced by a maladjustment of price levels.

Slight reflection is needed to realize that the gold standard can function effectively only to the extent that certain "rules of the game" are observed. Ideally, these rules are: (1) Gold holdings must be distributed among the major trading nations in such a manner that gold flows between nations will exercise a significant effect on their respective gold reserves and therefore on the size of their respective stocks of money. (2) Currencies in the leading nations must not be subject to sharp fluctuations in purchasing power. (3) A more-or-less adjusted balance of payments should prevail between these nations so that precipitous gold flows may be avoided. (4) The loan facilities of the nations should be sufficient to allow any one of them to obtain funds temporarily without abandoning the gold standard. (5) The nations on the gold standard should be politically stable with mutual trust that obviates the movement of funds from one nation to another for "noneconomic" reasons. (6) The economic system must be flexible and competitive so that gold flows and other economic forces at work will be reflected in prices. (7) Trade between nations should be reasonably free with no impediments to the movements of goods and services.

To the extent that these rules are honored in the breach rather than in the observance, the form and not the substance of a gold

^a Reinforced or moderated by capital flows and changes in interest rates.

standard prevails. This was true of the restoration of the gold standard by leading nations from the mid-1920's until the collapse in 1931 under the double impact of the maladjustments carried over from World War I and the depression beginning in 1929.

The automatic or regulatory features of the gold standard are reduced as the geographic area that it covers narrows, and they are the weakest when one nation alone keeps its monetary unit stable in terms of gold while others employ different types of standards. Such a national gold standard does not ensure stable exchange rates among the moneys of the various countries, for only one bears a fixed relation to gold. Since the exchange rates of the various moneys in terms of each other can fluctuate, the price levels in the various nations are free to move quite differently. Gold no longer serves to effect automatic adjustments of international price relationships. Even though nations not strictly on a gold standard may, and often do, hold sizable quantities of gold in their monetary stocks, gold flows to and from them merely to settle international balances. Changes in the stock of money do not follow from gold shipments, and the regulatory function of the gold standard is absent.

Under an international gold standard any single nation finds its freedom of monetary action severely limited. If prices in nation A fall, it will increase its exports while other nations will find their exports declining. Gold will flow from the other nations to country A. The countries losing gold will find their stock of money dwindling, and contraction in income and prices will ensue. Country A's gold supply will increase and so in turn will its monetary stock, prices, and income. These changes will continue until the prices and incomes of the various nations are in alignment.

An international gold standard ensures that all nations must "keep in step" with one another. In a sense, the international gold standard is a severe task master, for it demands that all nations will be depressed if any one nation suffers a depression. In the same manner, the gold standard requires that all nations will suffer inflation if one nation undergoes inflation.

Thus, economic developments in one nation involve adjustments in other nations as well. These adjustments may be very painful to many nations. If a nation attempts by monetary means to achieve domestic full employment, it may discover that rising prices lead to gold flows and a reduction of its stock of money, which prevents attainment of domestic economic expansion.

In the present world if retention of an international gold standard conflicts with domestic stability at full employment, most economists

would probably prefer domestic stability. There are two alternatives open to a nation desiring to avoid the full effects of the operation of an international gold standard. The first, often cited by critics of the standard as an outstanding defect, is to abandon the standard altogether when its restraints become too severe. The second, universally followed when a gold standard is employed in practice, is to modify it by introducing more-or-less deliberate management by the monetary authorities in order to insulate the domestic economy from the other nations of the world. The monetary authorities, both treasury, central bank, and others, may employ various instruments of control, that will be examined fully later, to alter the effects of gold flows on the nation's stock of money. They may either accentuate the effect or offset it in whole or in part. For example, they can lock up incoming gold without allowing its effect to be felt by the monetary system, or they can release gold that had been previously so "sterilized"; the government can increase or decrease its issues of token coins and paper money to offset changes in gold stocks; central banks can increase or decrease their issues of circulating notes; and the ratio of bank reserves to checking account deposits can be changed. The trend over the years has been toward the use of more and more deliberate management, reducing the tie between gold and the stock of money more and more to a psychologic rather than a mechanical one.

■ BIMETALLISM

Silver standards played an important part in our monetary history up to the middle of the nineteenth century.[†] During the latter half of the century bimetallism versus gold provided a burning political and economic issue. With the turn of the twentieth century the controversy abated, but periodically since then the silver question has raised its head, even though a bimetallic standard seems unlikely to be employed again.

A bimetallic standard is one in which the unit of account and all types of money are kept at a constant value in terms of gold and also in terms of silver. The formal requisites are the same as in the case of a full gold standard except that the provision for unlimited purchase, sale, and redemption must include both metals, with the

[†] Under a silver standard the unit of account and all kinds of money are kept at a constant value in terms of silver. The formal requisites are the same (but applied to silver) as under a full gold standard, but modifications were less pronounced than in the case of gold because few nations retained a silver standard during the era in which deliberate monetary management became widespread.

individual permitted freely to choose either. The definition of the monetary unit determines the mint ratio between the two metals. In 1834 the American dollar was defined as 371.25 grains of pure silver or 23.22 grains of pure gold; since the former weighed 16 times as much as the latter, the mint ratio was 16 to 1. In other words, the mint price of silver was fixed at \$1.29 per ounce of 480 grains and the mint price of an ounce of gold at \$20.67 per ounce.

The *compensatory theory* seeks to explain the forces at work to keep the market prices of both metals equal to their mint prices, and, therefore, the market equal to the mint ratio. Any deviations, it claims, would be slight and of brief duration. For example, if while the mint ratio between the two metals is 16 to 1, the price of gold on the market should rise and the price of silver fall so that the market ratio changed from 16 to 1 to 17 to 1, holders of gold bullion would sell it in the market instead of taking it to the mint. Conversely, holders of silver bullion would take it to the mint instead of the market. Next, the individuals who obtained dollars for their silver (and other holders of dollars as well) could redeem these dollars in gold and sell the gold in the market, buying silver with the proceeds. In the market the increased demand for silver in the face of a reduced supply would raise its price, while the reduced demand for gold, in the face of an increased supply, would lower its price. This process could continue until the market and the mint prices (and hence also the ratios) coincided for each metal.

Granted that Gresham's Law would operate in this manner, with the metal that is relatively overvalued for monetary purposes driving out of monetary use the metal that is relatively undervalued for such purposes, the effect would be an alternating standard rather than a true double standard. At any one time the effective standard would consist of one metal rather than both. This can be avoided only if mint values properly set when the system is instituted are appropriately adjusted in the light of subsequent developments. Moreover, as in the case of monometallism, many believe that to operate effectively bimetalism must be international in character and not be confined to a single nation.

Several advantages have been claimed for bimetalism. First is a tendency to stabilize exchange rates among bimetallic, silver and gold standard, nations. The limits to fluctuations from parity would be set by the cost of shipping metal. Second is a tendency to provide a standard with more stable purchasing power than would be afforded by a monometallic standard. The value of the standard would be determined by the supply and demand for two metals, not merely one. Since the standard follows the metal which falls in value, the

standard would fluctuate less widely than if one metal alone were used.⁸

Advocates and critics of bimetallism have different interpretations of history. For example, before 1834 the United States had a mint ratio of 15 to 1. Since this was below the market ratio, gold was drained out, and silver tended to be our sole standard money. In changing the ratio to 16 to 1 in that year, we set the ratio too high, and silver was driven out by gold. Again, the Latin Monetary Union founded in 1865 was forced in 1873 to limit the coinage of five-franc silver pieces. Discovery of gold in Australia and California had cheapened that metal and provided ample supplies of it. The 1870's witnessed several nations turning toward gold and away from silver in their currency reforms. To the critic, bimetallism failed; the advocate wonders how it could succeed under the conditions cited.

The latter history of bimetallism in the United States is a record of "doing something for silver."⁹ In 1878 the Bland-Allison Act required the Treasury to buy not less than \$2 million or more than \$4 million of silver every month and coin it into silver dollars. Since it was found that the coin itself did not circulate readily, provision was made for the issue of silver certificates. The silver dollars were made full legal tender, but the silver certificates lacked that quality. Up to 1890 secretaries of the Treasury (who were in general unsympathetic to the cause of silver) bought the minimum amount required; from 1879 to 1890 silver dollars in the amount of \$253 million were thus added to the circulation. It is probable, however, that the net increase in currency merely met the normal growth in the country's requirements. To a large extent, the silver certificates simply took the place of national bank notes which were being rapidly retired with the concurrent reduction of the national debt.

In 1890 additional concession was made to the silver interests in order to insure passage of a tariff measure. The Sherman Silver Purchase Act directed the Secretary of the Treasury to buy each month at the current market price 4.5 million ounces of silver bullion. The bullion was to be paid for through the issue of new legal-tender Treasury notes, which were to be redeemable in either gold or silver at the discretion of the Secretary of the Treasury. The act announced a government policy of maintaining the two metals at a parity. In the three following years about \$218 million was added to the stock of money in this manner. Until 1898 the silver

⁸ W. S. Jevons, *Money and the Mechanism of Exchange* (New York, 1883), pp. 137-40. Symmetallism has been proposed to achieve a true double standard; silver and gold would be fused in specified proportions in one coin or bar, and paper money would be made redeemable in specified quantities of gold and silver.

⁹ The gold policy of the New Deal will be discussed in Chapters 22 and 23.

was retained in bar form in the Treasury to secure upwards of \$150 million of new government paper money. The tampering with the standard represented by these new arrangements, the fear of further injection of silver into circulation, decreased governmental revenues from import duties and increased governmental expenditure, led to deep distrust of the stability of the dollar both at home and abroad. In 1893 there was a severe drain of gold, both internal and external. Gold was hoarded domestically by the banks and the public; it was exported because of an unfavorable balance of payments and also because foreign owners took to selling off their American securities. These factors contributed in no small measure to the panic of 1893. The "endless chain" of gold withdrawals from the Treasury through redemption of greenbacks and Treasury notes of 1890, while payments to the government were made in silver and paper, made the situation critical. When Grover Cleveland took office as President in 1893, the gold reserve had been reduced to about \$100 million. In the emergency Cleveland called a special session of Congress and demanded the repeal of the Sherman Act, which he blamed for the bad business and financial situation. Congress in 1893 reluctantly repealed the Sherman Silver Purchase Act.

The continued strength of the silver interests is evident in the Pittman Act of 1918, which was designed to conserve our gold reserves and to meet adverse trade balances with the Orient by the export of silver rather than gold. It provided for the retirement of silver certificates and the melting of coin to an amount not exceeding \$350 million, the silver to be sold by the British government for coining Indian rupees. It was stipulated further that Federal Reserve bank notes could be issued to take the place of the silver certificates withdrawn. The government was further required to repurchase silver (from American sources at not less than one dollar an ounce) and to reissue silver certificates; simultaneously, the Federal Reserve bank notes were withdrawn. Repurchases of silver amounting to \$271 million were completed in June 1923.

On June 19, 1934, the Silver Purchase Act was signed by the President despite earlier opposition of the Treasury. Its major provisions were:

1. The United States was to continue to purchase silver begun in December 1933 with the ultimate objective of having and maintaining one fourth the value of the monetary stock in silver.
2. The President was authorized in his discretion to require the delivery of all silver to the mints and to pay for it a fair market price.
3. The Secretary of the Treasury was authorized and directed in his discretion to purchase silver at home and abroad in order to

achieve the first aim. Such purchases were not to be made at a price in excess of \$1.29 per ounce (established as its monetary value) but no more than 50 cents per ounce was to be paid for silver situated in the United States on May 1, 1934.

4. The Secretary of the Treasury was authorized and directed to issue and place in actual circulation silver certificates in such denominations as he might from time to time prescribe in a face amount not less than the cost of all silver purchased under this act or, at his discretion, in an amount equal to the monetary value of the silver purchased (\$1.29). These and all other silver certificates were to be secured by silver bullion and silver coins having a monetary value (\$1.29 per ounce) equal to the amount of the certificates. All silver certificates heretofore and hereafter issued were to be legal tender and redeemable at the Treasury in standard silver dollars.

5. Whenever the market price of silver exceeded its monetary value or the proportion of silver was greater than one fourth of the monetary value of the total stock of gold and silver, the Secretary of the Treasury might, with the approval of the President, sell at home or abroad any silver acquired under the act, provided that the reserve in silver was maintained against the silver certificates outstanding.

In August 1934, under the terms of the act, all silver in the United States was nationalized, and holders were forced to surrender their stocks to the Treasury in return for silver certificates at the rate of 50 cents per fine ounce. The Treasury has not actively pursued either the goal of raising the price of silver to \$1.29 per ounce or to acquire silver until the ratio of the value of silver to gold in our monetary stocks reaches 1 to 3. The Treasury used the discretion granted it to set conservative buying prices for silver bullion. The silver bloc was discontented with the prices paid by the Treasury for the metal, and in July 1939 Congress established a minimum buying price of 71.1 cents per ounce for domestically mined silver. In July 1946 the minimum buying price was changed by law to 90.5 cents per ounce. Since 1934 the Treasury has issued silver certificates only for the cost of the bullion, not for its full monetary value of \$1.29 per ounce. In World War II the Treasury went to the limit of its legal authority to make its stocks of silver bullion available for industrial use in this country and abroad. In June 1934 the ratio of silver to gold in our monetary stocks was about 10 percent; in December 1951 the ratio was only 14 percent, reflecting the heavy gold imports and the revaluation of gold in January 1934 from \$20.67 to \$35 per ounce.

■ COMMODITY-RESERVE STANDARD

Under the commodity-reserve standard the unit of account is defined as a fixed quantity of a composite of commodities in the same way that a gold standard ties the unit of account to a fixed quantity of gold. The monetary authority would offer to buy and sell for money a bundle of warehouse receipts giving control over a stated quantity of each of a number of basic commodities.¹⁰ The plan further proposes, however, that the authority watch the commodity markets and actively seek chances to buy and sell on the stated terms instead of merely waiting passively for people to accept its terms. Whenever it observed a combination of prices which enabled it to buy (in lots of \$100,000 or more) a "\$100 unit" for \$95 or less, it would place buying orders on all the commodity markets involved and conversely when it saw a chance to sell for \$105 or more. It would continue buying until the price climbed above \$95 and selling until the price sagged below \$105. The "spread" between buying and selling prices is designed to keep trifling market fluctuations from bringing the agency into the market.

In times of depression when incomes and prices are falling, the monetary authority would buy the component commodities and issue money in payment. The commodities purchased would flow into the monetary reserves of the government, thereby reducing the supply of goods. At the same time the stock of money would be increased, thereby encouraging increased purchases by the public. The effects of both operations would be to increase prices and incomes in the country. Conversely, in boom times with rising prices and incomes the monetary authorities would reduce their reserve of commodities by selling them in the market and destroying the

¹⁰ The plan was originally proposed by B. Graham, *Storage and Stability* (New York, 1937). In the revised version requiring an international rather than merely a United States commodity standard (*World Commodities and World Currency*, New York, 1944, p. 45), he suggests that a \$100 unit of commodities might include:

12 bushels wheat	34 pounds coffee	7,480 pounds coal
12½ bushels corn	9¼ pounds tea	204 pounds wood pulp
87 pounds cotton	300 pounds sugar	506 pounds pig iron
25 pounds wool	16.7 pounds tobacco	35 pounds copper
24 pounds rubber	6.3 barrels petroleum	4 pounds tin

It may be added that the commodities selected for inclusion should be compact and durable enough for storage, sufficiently standardized to permit of definite price quotations, and free from monopolistic control that would cause price manipulation which brings pressure against the composite group of commodities.

Incidentally, the idea of coining commodities into money is not new. It has a special appeal in times of depression, when it seems to have a twofold objective—"doing something for commodities" while enhancing monetary stability.

money received in payment for the commodities. The stock of money is reduced, and the supply of goods on the market is increased, thereby reducing prices and income. Thus, the effects of the actions of the monetary authority serve to prevent prices and incomes from rising too high or from falling too low. The prices of individual commodities are free to move in relation to one another.

If the same commodity-reserve standard were employed by the leading trading nations of the world, their respective exchange rates would be fixed as under the gold standard. If the price level in country A were to fall, citizens of country B would find it cheaper to buy in A, thus increasing the demand for A's goods and causing the price level in A to rise. By selling the goods purchased from A in their own country, the price level in B would decline. When the price levels in A and B were in line, purchases because of differences in national price levels would cease. In this manner price stability among nations would be maintained.

The advantage claimed for the commodity-reserve standard is that stability of the price level and income would be attained by automatically increasing the monetary stock in depression and decreasing the stock of money in booms. Various difficulties, however, would be certain to arise in practice. The selection of the commodities to be included is especially difficult were the plan to be instituted on an international scale. In fact, each participating nation would desire a unit reflecting its own particular economy. Wool is far more important to Australia and coffee to Brazil than either commodity is to the United States. Single-crop countries would find an international standard of less advantage than an independent currency with flexible exchange rates. The automatic stabilization effects again might be upset by pressures stemming from forces outside the monetary stock. Assume there is a strong long-run trend in commodity prices either downward (for example, as a result of improved agricultural techniques) or upward (for example, due to union pressure to raise wages). If the long-run trend of prices were downward, the government would be swamped with reserve commodities since the Treasury price for these commodities is fixed. In the event prices are secularly rising, the government's stocks of reserve commodities, which it sells at a fixed price, might be depleted. In either case, the government would have to revise the contents of the unit of commodities. At times of revision, too, there might be considerable political pressure exerted by particular industries to change the "weights" so as to favor the commodity in question.

Another disadvantage of a commodity-reserve standard is the tremendous quantity of goods which would have to be taken out of

the economy. For example, if the rate of growth of output was 3.5 percent annually and the monetary stock was increased by this amount to meet the growing needs of trade, in twenty years the stock of money would be doubled; hence the stock of goods produced by people but not available to them, since they are locked up in vaults, would have doubled. Surely the same ends can be achieved as the commodity-reserve proposal by permitting the monetary authorities to issue paper money without backing in accord with definite legislation designed to achieve price stability, income stability, or both.

■ INCONVERTIBLE-PAPER STANDARDS

Standard money need not be gold or silver; the unit of account need not be kept constant in relation to a metal. Under a gold standard the holder of money is simply assured that he can convert the money into one commodity, gold, at a fixed price. The gold standard does not assure stability of the purchasing power of the monetary unit over goods and services other than gold. For example, while the United States was on the gold standard, the country experienced the creeping inflation of 1899-1913 and the depressions of 1904, 1907, and 1921.

Inconvertible-paper standards are those in which, while the various kinds of money in circulation are usually maintained at a parity with each other, they are not kept constant in their relation to a metal. In other words, the unit of account is abstract, but otherwise the position of the metal follows no set pattern. The government may accumulate metallic reserves and may either buy (though not sell) the metal at a fixed price or neither buy nor sell at a fixed price.

Paper standards first generally arose out of breakdowns in convertibility under a metallic standard, in particular under the pressure of major wars. Eventual redemption was taken for granted in numerous cases, notably the British restriction period during the Napoleonic Wars and the "greenback" era of the American Civil War, so that price inflation and its consequences were regarded as no more than a disagreeable interlude. In a few conspicuous cases, however, hopes of redemption lapsed, particularly with the Continental currency of the American Revolution and the assignats of the French Revolution, and the units became worthless. World War I provided a similar experience, with the British pound restored to its prewar parity and the German mark virtually repudiated. In other cases the large-scale expenditures of wartime led some nations,

notably France and Italy, to resume specie payments at a greatly reduced parity.

* In the cases cited a paper standard arose in an era when metallic standards were generally preferred, and despite past unsatisfactory experience with paper, because of the necessities of government finance. Governments sought refuge in a paper standard when war or other serious economic disturbance made it appear necessary that these governments provide themselves with more liberal stocks of money than they were able to convert into metal as the public wished. The use of inconvertible-paper standards in times of great emergency and the undesirable consequence thereof have provided the basis for arguing that inconvertible paper should be avoided or restricted. In contrast to the instances where paper standards were employed as emergency measures, there are historical illustrations of nations which deliberately adopted paper standards with abstract units of account. For example, during World War I Sweden and some other nations experiencing a large-scale influx of gold deliberately suspended the free coinage of gold in order to avoid increasing the stock of money. These nations chose a paper standard in order to avoid inflation resulting from a swollen stock of money.

It is important for the student to realize that under a metallic standard in its pure form the stock of money is determined by the stock of the money metal. There is no reason for assuming that a sufficient quantity of gold would be forthcoming to automatically assure that the appropriate quantity of money will be available to a nation. In as complex a problem as providing the appropriate amount of money for the economy, no simple mechanical solution as rigidly tying the stock of money to the stock of monetary metal appears to be desirable. Therefore, monetary authorities assumed more and more control over the quantity of money. But it was during the depression of the 1930's that managed paper standards became popular. Public approval was given to Keynes' contention that the gold standard in attempting to keep slovenly currency systems up to the mark by limiting the discretion and fettering the independent actions of governments and central banks may keep more progressive countries "below the standard of monetary management which they might otherwise attain."¹¹ Management of an inconvertible-paper standard was to aid economic recovery and help achieve stabilized full employment.

¹¹ *A Treatise on Money* (New York, 1930), Vol. 2, pp. 299-300.

QUESTIONS AND PROBLEMS

1. a. Distinguish between unit of account, standard money, and monetary standard.
b. Draw the demand curve for gold under the gold standard. Explain.
2. a. Dr. A. C. Miller states (*Hearings* before the Congressional Committee on Stabilization in 1926) that the gold standard "acts as a kind of regulating and levelling influence, so as to keep the price level, credit conditions, and the currency situation in all countries that are of the group that have the gold standard, in some sort of proper alignment to one another." Explain how this influence operates.
b. What were the weaknesses of the post-World War I gold standard? Were they inherent in the gold standard itself?
3. a. Were the reasons for the adoption of a gold-bullion standard in England in 1925 the same as those underlying American action in 1933 and 1934?
b. Contrast the post-World War I gold standard and the gold-exchange standard.
4. a. Explain why gold mine stock prices soared from 1929 to 1933 while prices of other classes of stocks were falling to new lows?
b. Do you favor payment of a government subsidy to gold mine owners whose profits are squeezed by rising costs while the official buying price of gold remains fixed? Explain.
5. It has been stated that of all the different types of gold standard, the gold-coin standard provides the greatest public control over monetary policy.
a. Explain how.
b. Is this feature desirable?
6. a. Bimetallism "combines the worst features of both the gold and silver standards while it is actually in operation, and tends in practice to become gold or silver monometallism." (A. D. Gayer, *Monetary Policy and Economic Stabilization*, London, 1935, p. 183.) Explain why.
b. If the United States had bimetallism, with gratuitous coinage of gold and silver at a mint ratio of 16 to 1, and the gold dollar weighed 24 grains (480 grains to an ounce), what would be the mint price of silver? If the market price of silver were \$1.20 per ounce, what operations would occur?
7. a. Does the fact that World War II required a great increase in our monetary stock change your opinion of the merits of the Silver Purchase Act of 1934? Explain.
b. Has the American silver miner been the chief beneficiary of the silver purchase program? If not, who has and why?
c. What has the purchase of silver since 1934 cost the Treasury and the American taxpayer?

8. In what ways does the commodity-reserve standard resemble a metallic standard? A managed inconvertible-paper standard?
9. "The inflation which has occurred under paper money has often proved less destructive and inflicted less injury than the deflation which the exigencies of the gold standard have on occasion imposed." (Gayer, *op. cit.*, p. 179.)
 - a. What injury may inflation inflict? Deflation?
 - b. Do you agree with the statement? Explain.
10. Explain how the repudiation by the Rumanian government of its currency in 1947 could speed up sovietization in the country, which had lagged far behind the rest of Eastern Europe in eliminating private enterprise.

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Credit and Credit Instruments

■ THE NATURE OF CREDIT OR DEBT

DEBT represents an obligation to pay a definite sum of money at some fixed or determinable future time and place. Debt is typically expressed in terms of the unit of account. The greatest part of debt, and therefore of credit, arises from transactions in which the creditor parts with goods, or services, or money at one time in return for the debtor's promise to pay (goods or more usually money) at some time in the future. Thus, the creation of credit involves the exchange of present goods or purchasing power in return for future goods or purchasing power.

It is important to recognize that credit and debt are the same thing looked at from different points of view. If Jones lends Smith \$1,000, Jones has a \$1,000 credit due in say 6 months. At the same time Smith has a debt of \$1,000 payable in 6 months. Since credit and debt are the same thing viewed by different persons, it is illogical to say debt is bad and credit is good. Nevertheless, illustrations of this confusion abound in the world about us; it is often asserted that "credit is the lifeblood of trade" while "debt is a burden on our economy."

Judging the right amount of credit or debt for our economy is an extremely complicated problem which we shall postpone for the latter part of our study. Not only do we need to know the amount

of credit outstanding, but also the rate at which it is changing, the purposes for which it is granted, the state of the economy (income, output and employment), the level of prices, and a host of other factors. At this point we need only say that at any time a certain amount of credit (or debt) is needed within the community. In general, the aggregate amount is related to the quantity and value of goods in the process of production and distribution.

BASIS OF CREDIT

The ability of an individual, business, or governmental unit to obtain credit (present goods or money in return for a promise to pay in the future) depends on the prospective creditor's faith in the debtor's ability and willingness to pay.¹ In general, the debtor's ability depends upon his property and business acumen; his willingness, upon his integrity. There are certain elements which credit managers consider in determining whether to extend credit and if so how much. The basic factors are called the "C's of credit"—*character, capacity, capital, and collateral*.

Character The moral risk is measured by character, an important factor in determining a debtor's ability to obtain credit. For the individual, it is measured in terms of his personal habits, style of living, business and personal associates, and his general standing in the business and social community. For the nation, character is measured by the stability of the government, public and private thrift, and industrial and scientific achievements. For both the nation and the individual, the attitude toward previous obligations reflects willingness as well as ability to repay debts. A party with a reputation for meeting his obligations only after considerable delay or when forced to by court order is not likely to obtain credit no matter how great his ability to pay may be.

Capacity Capacity measures the business risk; an examination of the potential debtor's past financial statements affords a basis for estimating his future income. In general, the individual's capacity is revealed in his energy, ambition, education, experience, executive ability, and good judgment. Ordinarily, a creditor looks to the potential debtor's future income for repayment of an obligation. An individual with a steady income, a firm with excellent earning prospects, or a governmental unit with stable sources of revenue

¹ Some writers have regarded confidence as the essence of credit and have defined credit in terms of confidence instead of looking at the credit transaction and defining credit as a deferred exchange. The word "credit" is derived from the Latin *credo*, meaning "I believe," which is a combination of the Sanskrit *cred*, meaning "trust" and the Latin *do*, meaning "I place."

will be more certain of obtaining credit than will its counterpart with an *uncertain earning record and prospects*. Because it is not possible to forecast accurately the credit applicant's prospective earnings, the lender is also interested in the debtor's capital.

Capital The property risk measure is capital. The type and value of the potential borrower's capital affect his ability to obtain credit. Capital serves to protect the creditors against loss; hence, credit analysts carefully scrutinize the balance sheet of the applicant for credit. Not only are the assets examined but also the other debts in order to ascertain the net amount by which total assets exceed total liabilities. An examination of assets is designed to determine the stability of their value and the ease with which they can be converted into cash without loss of value. It should be readily evident that other things being equal an applicant who possesses capital with a stable value and a high degree of liquidity (for example, a short-term government security) is more likely to obtain credit than one whose capital fluctuates widely in value and can be sold only at a great loss of principal.

Collateral A lender not satisfied with the amount of capital possessed by the would-be debtor may extend credit if the applicant pledges collateral to support the debt. Property whose value can be determined easily and which can be readily converted into cash is preferred for this purpose. The security pledged for collateral may consist of stocks and bonds regularly traded on organized securities exchanges (stock exchange collateral) and bills of lading, warehouse receipts, and trust receipts for staple commodities (commodity collateral); automobiles and real property (land and buildings) frequently are used as collateral. The pledge of collateral serves at least two purposes. Since the only way the debtor can redeem his security is to repay the loan, he has a special stake in meeting his obligations. Should the borrower fail to make payment, the collateral can be sold, and the proceeds used to discharge the claim. An added feature of safety is introduced by requiring the market value of the collateral to be greater than the face value of the loan which it secures. The difference between the market value of the collateral and the loan granted with it as security is known as margin. A 25-percent margin would mean that the loan is equal to 75 percent of the market value of the collateral. The size of the margin which is required varies with the type of collateral, the stability of its market price, and other factors, such as the state of economic activity.

Frequently a person may borrow by substituting for collateral a guarantee of payment given by others. Thus Smith, unable to obtain credit from the bank on his own signature, may be granted a loan

if Jones endorses his note, thereby guaranteeing payment should Smith fail to repay the loan. A home purchaser may be granted a loan because the Federal Housing Administration guarantees the lender payment of most of the real estate mortgage.

TYPES OF CREDIT

Classifications of credit are legion depending upon the purpose of the study in which credit is being discussed. We shall limit our examination to three of the more widely used classifications which are shown in Table 4.

TABLE 4
CLASSIFICATIONS OF CREDIT

As to use	As to maturity	As to type of debtor
a. Investment	a. Long-term	a. Public
b. Commercial	b. Intermediate	b. Private
c. Consumption	c. Short-term	
	d. Demand	

It should be readily evident that these three categories are not mutually exclusive. For example, investment credit may be subdivided by maturity and by type of debtor. Thus investment credit is characteristically long-term credit, and it may be employed by either private or public debtors.

Investment Credit Business firms and governmental bodies are typical users of investment credit to acquire fixed assets as plant and equipment which ordinarily have a relatively long life expectancy. Furthermore, a corporation borrowing to build a factory knows its earnings will not be large enough to repay the loan in 2 or 3 years. For these reasons investment credit is long-term credit and is represented by bonds and notes having maturities of 5 or more years.

Commercial Credit For the current operations of an enterprise an organization uses commercial credit to finance the production, manufacture, and marketing of goods. This type of credit is typically short-term; repayment of the debt is made with the proceeds of the current sales of the firm, but it is self-liquidating only to the degree that current operations prove successful. Commercial credit, if expressed in written instruments, is evidenced by a bill of exchange, promissory note, or trade acceptance.

Consumption Credit The utilization or acquisition of consumers' goods ranging from a loaf of bread to the building of a home is financed by consumption credit. Repayment of the debt is not related to the use of the proceeds of the loan but depends upon the borrower's general income. The importance of consumption credit has been growing steadily since World War I, and it is now recognized as an important factor affecting economic stability.

Long-term Credit Classified by *maturity*, credit having a maturity of 5 or more years when contracted is characterized as long-term. This type of credit is customarily employed to acquire durable or fixed assets which, when employed, provide earnings in small amounts relative to the debt over a period of years. Thus, the debt is contracted for a long period since the borrower is not in a position to pay in shorter time periods. A business borrowing to build a factory realizes it is not likely to be able to repay in a few years; consequently, it does not contract a short-term debt since this may prove financially embarrassing if upon maturity the short-term debt is not renewed.

Intermediate Credit Credit which typically has a maturity of over 1 year and not more than 5 years is termed intermediate. It is customarily employed to acquire assets which will yield at least the face amount of debt in that period of time. Intermediate credit may be employed by a farmer to acquire livestock, or by a manufacturer to acquire semidurable machines, or by a merchant to purchase store fixtures.

Short-term Credit Credit which runs for less than a year is described as short-term. This credit is employed for the current operations of a firm; the funds or commodities received are used to acquire inventories of raw, semifinished, or finished materials, to meet payrolls, to finance goods in transit, and other similar purposes. The borrower anticipates that within relatively short periods of time the goods will be sold, thus supplying him with the means with which the debt can be repaid.

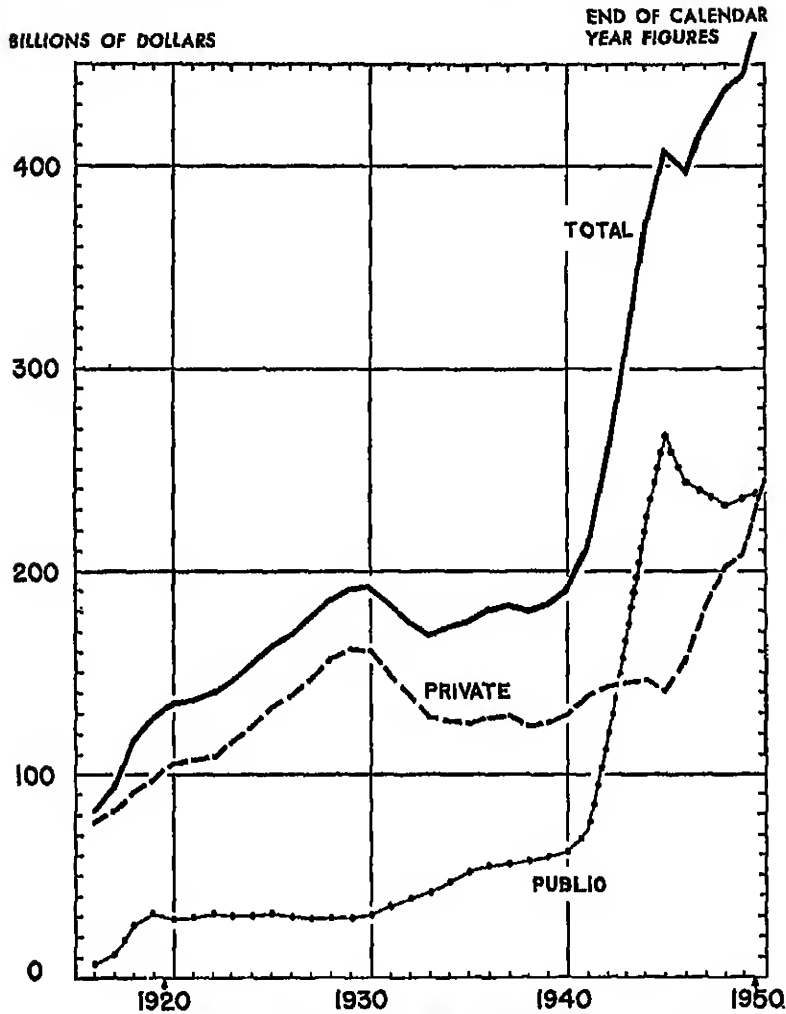
Demand Credit Demand credit is payable whenever the lender demands repayment by "calling" the loan. This type of credit is rarely employed by business firms since they have no way of knowing when they may be called upon to repay their obligation. The most common illustration of demand credit is a demand deposit with a commercial bank. A call loan made by a bank to a stock broker is a demand credit since the bank may request payment of the broker at any time.

Public and Private Credit Credit may also be classified by the *type of debtor*. *Public credit* is employed by national, state, and

FIGURE 3

PUBLIC AND PRIVATE DEBT

(Department of Commerce Estimates of Net Debt)



local governments. The debt may be the direct obligation of the governmental unit, or it may be guaranteed in whole or in part by the governmental unit. *Private credit* refers to all credit extended to nongovernmental units. When employed by business undertakings, it is known as *business credit*. In business literature the term *mercantile credit* refers to credit extended by one business concern to another. Credit received by consumers or households is known as *individual, consumer, personal, or retail credit*.

■ CREDIT INSTRUMENTS

Outstanding credit or debt may be reflected by (1) oral agreements, (2) book credits, or (3) written instruments. The written instruments consist of promises to pay—promissory notes, bonds, and long-term notes—or orders to pay—drafts and bills of exchange. The primary emphasis in this section is to indicate the general forms and uses of these instruments and to show how their employment facilitates the flow of goods and services through the economy. The discussion is necessarily brief. It does not include a detailed discussion of the law of negotiable instruments nor are we concerned with the numerous variations of these instruments as they are adapted to different industries or to changes in the conduct of business activity over time.

In general, oral agreements are used in consumption credit and, to a lesser extent, in commercial credit. Open-book accounts, promissory notes, and the bill of exchange or draft are employed principally in commercial credit; bonds and corporate notes are used in investment credit.

ORAL AGREEMENTS AND BOOK CREDITS

Outstanding credit, or debt, need not be evidenced by a written contract. In many cases credit transactions are consummated by an *oral agreement*. While such examples may be numerous, they involve only a small amount of credit in the aggregate. They are for the most part restricted to small transactions among persons well known to one another. Employment of an oral agreement in a credit transaction is unsatisfactory for several reasons. If the parties should disagree about the terms of the credit extension, there is no reliable way of determining who is right. The creditor may experience difficulty in proving the existence of the debt owed to him. Should the creditor find himself in need of funds, it is difficult to transfer his claim to a third party since the latter would

be reluctant to purchase a claim against a debtor if there were no written evidence of the debtor's obligations.

The *open-book account* has become the characteristic and simplest form of modern credit extension between business concerns. It consists merely of entries in the account books of business concerns, appearing as an account receivable on the books of the seller (or lender) and an account payable on the books of the buyer (or borrower). In many commercial transactions credit is extended in this form without any written evidence of the debt other than perhaps the invoices or shipping documents.

The advantages of the open-book account to both buyer and seller are the speed and simplicity with which such transactions can be handled. As with all credit, it affords the advantage to the seller of reducing sales resistance on the part of the customer who does not have to worry about immediate payment for the goods. Frequently the open-book account is coupled with a cash discount system whereby the buyer receives a discount if cash payment is made at an early date while net terms are required if the full time is taken in making payments (such as a 2-percent discount for cash payment within ten days and net terms if payment is made within thirty days).

The very informality of the open-book account may give rise to disadvantages to both the buyer and seller since a dispute as to the exact terms may arise. The creditor on an open-book account must wait while the debtor takes steps to pay since there are no effective methods to enable the creditor to enforce prompt payment. Collections may be slow, and bad debts and losses are frequent. Since there is no *prima-facie* evidence of the existence of debt, the debtor may claim defects in the goods, etc., and try to offset his obligation. The open-book account, in practice, penalizes the person making prompt payment in favor of the delinquent debtor.

Because of the unsatisfactory qualities of both oral agreements and open-book accounts as methods of extending credit, written credit instruments were employed. The virtue of a written credit instrument is that it is a legal document which evidences the existence and terms of the credit contract. Credit is, therefore, frequently embodied in written credit instruments which explicitly state the terms and existence of the debt and therefore tend to reduce the risk of nonpayment of the obligation. By improving the quality of the creditor's claim, written credit instruments enhance his ability to sell those claims to financial institutions, thus enabling the creditor to receive funds immediately.

WRITTEN INSTRUMENTS

Promissory Notes A promissory note is an unconditional promise to pay in writing which is made by one person to another in which the maker promises to pay on demand or at a fixed or determinable date in the future a stated sum of money to the order of a specified person or to bearer.² The two parties to the transaction are the maker or debtor and the payee or creditor. The promissory note's advantages over the open-book account as a credit instrument are that it provides definite evidence of debt as well as a fixed maturity date and sum of money to be paid. In this manner disputes over the terms of the debt are avoided. A bank can present the instrument to the debtor for payment, which tends to assure prompt payment.

In commercial credit promissory notes are employed chiefly for debtors who are considered interior credit risks and, therefore, are not extended credit on an open-book account. Only in a few industries, such as jewelry and lumber in which credit terms are characteristically long, has the promissory note superseded sale on open-book account. The promissory note issued by the borrower is the standard form in which loans are obtained from banks (Figure 4). The promissory note is also used as an instrument of public credit or bank credit. Government paper money and bank notes are merely noninterest-bearing promises to pay by their respective issuers.

Bills of Exchange A draft or bill of exchange differs from a promissory note in that it is an *order to pay*. The draft or bill of exchange is an unconditional order in writing signed by the drawer requiring the party to whom it is addressed to pay on demand or at a fixed or determinable future time a definite sum of money to the order of a specified person or to the bearer. There are three parties to a draft: the drawer or the one who orders the payment; the drawee, or the one who is ordered to pay; and the payee or person to whom payment is ordered to be made. The payee or ultimate creditor may be the same person as the drawer in which case there are only two parties to the transaction—a drawer payee and a drawee. When the parties involved are located in the same country, the instrument is ordinarily called a *draft*; if one of the parties is located in a different country, the order to pay is called a *bill of exchange*.

It is important to remember that a draft, or bill of exchange, is merely an order to pay; it is not an obligation of the drawee to

² Our discussion is confined to promissory notes and bills of exchange that meet the requirements of the negotiable instruments law.

\$ _____ New York _____ 19 _____

_____ after date _____ promise to pay to

the order of **BANKERS TRUST COMPANY,**

_____ Dollars

at **BANKERS TRUST COMPANY, 529 FIFTH AVENUE, NEW YORK, N. Y.** and to pay interest on the unpaid principal amount hereof until maturity at the rate of _____ % per annum, payable on the _____ day of each month, commencing on _____ 19 _____

Value received _____

Due _____

SPECIMEN

Promissory Note

TRADE ACCEPTANCE
instrument when accepted by the NATIONAL ACCEPTANCE COMPANY, FEDERAL RESERVE SYSTEM

No. _____ 19 _____

ON _____ (DATE OF MATURITY) _____

PAY TO THE ORDER OF OURSELVES

DOLLARS (\$ _____)

THE TRANSACTION WHICH GIVES RISE TO THIS INSTRUMENT IS THE PURCHASE OF GOODS BY THE ACCEPTOR FROM THE DRAWER. THE DRAWER MAY ACCEPT THIS BILL PAYABLE AT ANY BANK, BANKER OR TRUST COMPANY IN THE UNITED STATES WHICH SUCH DRAWER MAY DESIGNATE. SUCH BANK, BANKER, OR TRUST COMPANY IS DIRECTED TO PAY THIS ACCEPTANCE AND CHARGE IT TO THE ACCOUNT OF THE ACCEPTOR UPON PRESENTATION AT MATURITY OR WITHIN ONE YEAR THEREAFTER.

TO _____ (NAME OF DRAWER)

_____ (STREET ADDRESS)

_____ (CITY OF DRAWER)

DATE _____

PAYABLE AT _____

LOCATION OF BANK _____

BY _____ (NAME OF DRAWER)

SPECIMEN

Trade Acceptance

CERTIFIED
 7 SEP 25 1952 7
 THIS CHECK IS GUARANTEED BY THE BANKERS TRUST COMPANY

THIS CHECK IS IN FULL PAYMENT OF THE _____ No. _____ 19 _____
 AND THE PAYEE ACCEPTS AS SUCH

DATE	PARTICULARS	AMOUNT

NEW YORK _____ \$ _____

DOLLARS _____

BANKERS TRUST COMPANY
 FIFTH AVENUE AT 61st STREET
 NEW YORK, N. Y.

DO NOT DESTROY

SPECIMEN

Certified Check

FIGURE 4 CREDIT INSTRUMENTS

pay. The mere fact that I order Charles Abbott to pay by drawing a draft on him does not obligate him to pay. The draft can be converted into an unconditional obligation to pay when the drawee accepts by writing *accepted* on the face or back of the draft and affixes his signature. In general parlance, the act of acceptance changes the draft from an order to pay (you owe me) to a promise to pay (I owe you). Since the act of acceptance binds the acceptor to meet his obligation, it should be clear that an acceptance entails less risk of nonpayment and is therefore a better credit instrument than an unaccepted bill.

Bills of exchange can be classified in a number of ways. We shall discuss only three groupings which are enumerated below:

TABLE 5
CLASSIFICATIONS OF BILLS OF EXCHANGE (INTERNATIONAL)
OR DRAFTS (DOMESTIC)

By parties	By maturity	By security
a. Banker's bill	a. Demand (sight) bill	a. Clean bill
b. Commercial bill	b. Arrival bill	b. Documentary bill
c. Trade bill	c. Time bill	

A bill drawn by one banker on another is known as a *banker's bill*. When an individual or business concern (other than a bank) draws a bill on a bank, the instrument is known as a *commercial bill*. A bill drawn by an individual or business concern upon another individual or business concern is called a *trade bill*. A trade bill accepted by the drawee is a trade acceptance (Figure 4), while a banker's bill or a commercial bill becomes a *banker's acceptance* if accepted by the bank upon which it is drawn.

Classified by maturity, a *sight* or *demand bill* is payable upon presentation to the drawee. A bill payable upon the arrival of the merchandise at its destination is known as an *arrival draft* or *bill*. A *time draft* is payable at some future date; this date may be stated as a specified number of days after the bill is drawn or a specified number of days after the date on which the drawee accepted the bill. Time bills (in contrast to demand bills) are usually presented to the drawee for acceptance, thereby binding the acceptor to meet his obligation.

Thus, the time bill is customarily employed to serve as written evidence of debt arising from a business transaction. The sight bill,

notably in the form of a bank check drawn by the depositor on his bank, is widely used to make domestic payments (see Figure 4).³ In remitting funds abroad a demand bill drawn by one bank at home on another in a foreign country is ordinarily employed. On occasion a seller may draw a sight bill on a delinquent customer to demand payment of a debt, hoping that when the bank presents the bill to the debtor for payment, he will think twice before dishonoring it.

Commercial bills and trade bills, when employed in foreign as contrasted with domestic trade, are ordinarily accompanied by documents which convey title to the goods. These instruments are described as *documentary bills* and are normally employed to force the drawee to accept the bill before title to the goods is relinquished by the drawer.⁴ Both banker's bills drawn at sight by one bank on another and trade bills arising from domestic transactions are not accompanied by documents and are described as *clean bills*.

FACILITATING DOCUMENTS

The bill of lading, warehouse receipt, and trust receipt are not credit instruments since they do not serve to evidence debt. However, their use does enable goods in the process of sale or manufacture to serve as collateral for obtaining credit. These instruments are therefore described as facilitating documents, and they are treated in this chapter because by serving as collateral, they enable persons or firms otherwise unable to obtain credit to do so.

Bill of Lading The bill of lading issued by railroads, steamship lines, air lines, and trucking concerns serves as a contract for the transportation of merchandise and as evidence of title to these goods. The "straight" or nonnegotiable form made out to a specific person is distinguished from the "order" or negotiable form in which the person named (usually the shipper) can by simple endorsement transfer title to the goods to some other party.

In foreign trade the bill of lading is usually attached to the bill of exchange. The seller of goods attaches the bill of lading, among other documents, to the bill of exchange and discounts the latter with his bank. He is able to obtain funds before final payment is made. The lender, in this example the bank which discounted the draft, has title to the goods secured by the bill of lading and has in effect extended a loan with the goods serving as collateral.

³ A certified check is reproduced. When certifying the depositor's check, the bank deducts the amount from his account and holds it for payment of the check.

⁴ See Chapter 21 for a detailed discussion of the technique of financing foreign trade.

Warehouse Receipt When the goods arrive at their destination, they may be turned over to the purchaser or placed in storage. In the latter case a warehouse receipt will be issued to the owner of the goods; the collateral for the loan has merely changed from a bill of lading to a warehouse receipt. The receipt is merely a statement by the warehouseman that he has received the goods mentioned and that he will surrender them only to the individual presenting the document. A negotiable receipt permits delivery to a specified person, or his order or to bearer, whereas a nonnegotiable receipt restricts delivery to the person named in the document. Warehouse receipts are extensively used as collateral for bank loans. In this country the federal and state governments provide for the supervision of warehousemen to insure the integrity of their receipts and to render such receipts reliable evidence of the condition, quality, and ownership of the products stored. The Uniform Warehouse Receipts Act has been adopted in forty-six states, and the United States Warehouse Receipts Act has been enacted by the federal government.

Trust Receipt If the creditor changes his collateral from a bill of lading to a warehouse receipt, the purchaser of the goods still does not have possession of the goods. It is necessary for the buyer to take possession of the goods in order to display, manufacture, and sell them and thereby acquire the funds with which to make payment to the creditor. The creditor may release the goods to the debtor in return for a trust receipt. This instrument states that the collateral—either securities, a bill of lading or a warehouse receipt—released to the debtor is the property of the creditor, and the debtor agrees to hold it in trust for the creditor and to deliver the proceeds of its sale to the creditor. The trust receipt enables the buyer to take possession of the goods, but the loan is still protected since the receipt gives the lender legal title to the goods and a claim on the money received from their sale.

The courts have ruled that the creditor is entitled to the goods or the proceeds therefrom. However, when the debtor has disposed of the goods and is at the same time insolvent, the creditor cannot repossess the merchandise from an innocent purchaser.

In all three cases discussed above the extension of credit was secured by a document peculiarly suited to the state of the transaction. While the goods were in transit, the loan was secured by a bill of lading; the warehouse receipt secured the loan while the goods were in storage; and the trust receipt secured the loan on the goods in the hands of the purchaser. The ultimate security afforded by the documents was the value of the goods.

■ NEGOTIABLE INSTRUMENTS

Credit instruments can be sold whether they are *negotiable* or *nonnegotiable*. Nonnegotiable credit instruments are governed by the general common and statute laws of contract; title to such instruments can be transferred only by assignment. In assignment the assignee obtains no better title than that which the assignor possessed. For example, suppose Charles Abbott buys a refrigerator from the Fast Corporation, giving his nonnegotiable promise to pay \$100 at the end of 6 months. Suppose further that the Fast Corporation transfers the note by assignment to Joseph Gale, who then transfers it to Phil Lewis. Lewis runs the risk that Abbott may refuse to pay him at maturity for any reasons that would have excused him from making payment to the Fast Corporation. In addition, Lewis runs the risk that Gale may have found or stolen the note because he obtains no better title than Gale possessed. Thus, the purchase of nonnegotiable paper should be done only with full knowledge of the conditions surrounding its creation.

In view of the difficulties arising from the use of nonnegotiable instruments, merchants as early as the Middle Ages found this type of paper inconvenient for settling transactions. In order to facilitate the flow of goods, services, and funds, it was necessary to have credit instruments which could provide unconditional obligations to pay and that could be freely purchased and sold without doubts as to title. In meeting the need for easy negotiability, a new branch of law, negotiable instruments law, evolved. A uniform negotiable instruments law was ultimately drafted in the United States and has been adopted by all forty-eight states, in a few instances with minor modifications. Credit instruments that meet the specifications of these laws are called negotiable instruments.

Negotiable instruments are of two types—promises to pay and orders to pay. To be negotiable an instrument must be:

1. In writing and signed by the maker or drawer.
2. An unconditional order or promise to pay a specific sum of money.
3. Payable on demand or at a fixed and determinable time.
4. Addressed to identifiable parties.
5. Payable to bearer or to order of some named person.

An instrument promising or ordering payment to bearer or Charles Abbott or bearer is payable to any holder in due course.

An instrument ordering or promising payment to Charles Abbott or order or to the order of Charles Abbott is payable either to Charles Abbott or to anyone to whom he transfers title by endorsement. A person receiving a nonnegotiable instrument by purchase or assignment has a faulty title if the transferor's title is faulty. In contrast, a person receiving a negotiable instrument, if a holder in due course, has a title that is nearly perfect even though the transferor's title is imperfect. The debtor can refuse to pay only by making such claims as forgery, infancy, or insanity of the maker of the instrument.

A holder in due course is one who has taken a negotiable instrument under the following conditions:

1. It is complete and regular upon its face.
2. He became the holder before the instrument was overdue and without notice that it had been previously dishonored if such were the case.
3. He took it in good faith and for value.
4. At the time he took it he had no notice of any infirmity in the instrument or defect in the title of the person negotiating it.

Negotiation or transfer of a negotiable instrument from one party to another is accomplished by mere physical delivery if the instrument is payable to bearer. Endorsement of the instrument is unnecessary in such cases although it may be preferred by the recipient since all parties whose names appear are liable for payment. Title to negotiable instruments not payable to bearer is transferred by endorsement (usually on the back of the instrument).

When a person gives an unqualified endorsement to a negotiable instrument he, in effect, guarantees that: (1) The instrument is genuine and in all respects valid. (2) He has proper title to it. (3) He has no knowledge of any fact which would impair the validity of the instrument or render it without value. (4) If upon presentation to the debtor, it is dishonored by him, the endorser will pay the holder or any subsequent endorser who may be compelled to pay it.

There are four general classes of endorsement: (1) blank endorsement, (2) special endorsement, (3) restrictive endorsement, and (4) qualified endorsement. To illustrate these cases, let us assume a promise or order "to pay John Doe or order." Should John Doe endorse it *in blank* by merely signing his name, the instrument is made payable to bearer; it becomes freely negotiable without further endorsement. If John Doe endorses the instrument "pay to Charles Abbott" or "pay to Charles Abbott or order" and signs his name,

we have a *special* endorsement. The instrument is no longer negotiable until Charles Abbott signs his name at which time further negotiation is possible. An example of a *restrictive* endorsement is when John Doe signs his name and adds "pay only to Charles Abbott" or "for deposit to the account of Charles Abbott." At this point the instrument loses its negotiability. If John Doe signs the instrument and adds "without recourse" as endorser, he is giving notice that he is assuming no liability. An instrument with such a *qualified* endorsement is still negotiable. However, subsequent parties would be reluctant to accept it since the endorser does not undertake to pay the instrument if the party of primary liability does not honor his obligation.

■ STOCKS, BONDS, AND CORPORATE NOTES

The bill of exchange and the promissory note are used in commercial credit and in consumer credit. Funds for longer periods of time are obtained by issuing bonds, corporate notes, or stock.

STOCK

Some authorities in classifying credit instruments include stock issued by corporate enterprises among the long-term credit instruments. According to law, a corporation is an entity distinct from its bondholders and stockholders; the corporation can sue and be sued in its own name. Legally, a share of stock represents a partnership right to participate in the earnings of the issuing corporation and in the amount of property or money received if the business is liquidated. In an economic or financial sense, however, the share of stock has often been regarded as a credit instrument because stockholders, particularly in large corporations, frequently take no more active interest in the business than do bondholders or other creditors. Thus, in practice, the business is virtually divorced from its legal owners. The stockholders frequently regard themselves as participants in the corporation and as suppliers of funds to it in a manner differing in degree rather than in kind from other participants in the enterprise, such as bondholders.

A share of stock evidenced by a stock certificate represents a part ownership in the assets of a corporation after payment of its indebtedness, a claim to its net earnings, and an element of responsibility for its management. Endorsement operates as a power of attorney to remove the name of the former owner and to substitute

pany or trust department of a bank) who represents the bondholders.

There are a variety of bond categories; for simplicity we shall focus attention on the classification of bonds by the nature of the security for them. *Mortgage bonds* are issues, the principal and interest of which are secured by a lien on physical property. Second and third mortgage bonds (often issued under some such name as general or consolidated mortgage bonds) differ only from first mortgage bonds in the priority of their claim upon the pledged property. *Collateral trust bonds* are secured by stocks and bonds of other companies owned by the issuing company; the collateral for the issue is deposited with a trustee. *Debenture bonds* have no specific security and are backed by the general credit of the issuer; they are in effect little more than long-term promissory notes.

In the event interest and/or principal are not paid the trustee of a debenture issue can merely obtain a judgment against the debtor corporation and attempt to collect. In the event of default on a mortgage bond the trustee can foreclose (seize the mortgaged property and sell it), using the proceeds of the sale to meet the obligation owed to the bondholders. If a collateral trust bond is defaulted, the trustee can sell the collateral and use the proceeds to pay the bondholders. In practice, a defaulting corporation is likely to be placed in the hands of the courts for reorganization; the significance of the distinctions in bond categories lies in the relative treatment accorded the different classes of bonds by the court in the reorganization plan it approves.

CORPORATE NOTE

Similar to the bond except that the legal arrangements surrounding its creation are less formal, a corporate note may have a maturity of 1 to 10 years, although 3- to 5-year maturities are most common. These notes have no specific security and are customarily given to banks and insurance companies to evidence loans.

■ THE ROLE OF CREDIT (OR DEBT) IN THE ECONOMY

Over one hundred years ago, Daniel Webster wrote:

Credit has done more—a thousand times more—to enrich nations than all the mines of the world. It has excited labor, stimulated manufactures, pushed commerce on every sea, and brought every nation, every kingdom, and every small tribe among the races of men to be known to all the rest.

It is often stated that we live in a credit economy. Our stock of money is made up of debts. Government currency and coin, Federal Reserve notes, national bank notes, and checking deposits are all promises to pay on demand. Our monetary stock varies directly with the volume of outstanding debt. The largest part of our money supply is created by the banks who issue their own promises to pay on demand in return for the promises to pay given the banks by governmental bodies, corporations, and individuals.

The use of credit provides an economical means of supplementing or superseding various forms of metallic money. The banker is really a dealer in debt and is a convenient intermediary through which citizens offset their claims and debts to others. The clearing of credits or debts against each other provides settlement of claims without the use of hand-to-hand money. Thus, society is saved the cost of acquiring huge sums of standard money, the labor and cost involved in handling the metals, and the wear and tear incidental to their use. It is often said that in our present society hand-to-hand money has been relegated to service as a substitute for credit rather than the reverse.

The use of credit or debt facilitates increasing the economic well-being of the citizens. Modern production is a time-consuming process which requires large amounts of land, plant, equipment, raw materials, etc. Many businesses could not secure enough money to purchase all the necessary equipment and supplies with the proceeds of the sale of stock or the earnings retained by the firm. By obtaining credit (or borrowing) an enterprise is able to acquire the needed supplies and to assemble large plants, thus providing society with the benefits of large-scale enterprise and specialized industry. Furthermore, the use of credit enhances the salability of goods and services, thereby expanding markets so that they may absorb the enlarged output resulting from large-scale production.

Credit enables people to spread their consumption over time in a way that appears most advantageous to them. Installment credit increases the range of commodities, chiefly durable consumers' goods, which the individual may acquire; other forms of credit either to the consumer or the retailer enable the seller to sell on account. It is true that consumer credit may be, and often is, used to indulge in excessive consumption in the short run and leads to financial embarrassment in the long run. However, the judicious use of consumption credit can be very convenient to an individual. Moreover, consumer credit by expanding the market for goods encourages large-scale production and all its attendant economies.

For society as a whole in peacetime, savings are desirable when

they are invested and thereby returned to the income stream. Part of the savings of the community is done by business firms who invest their savings directly in the business and pay the money out in this manner. Another part of the savings is accomplished by individuals. One portion of the individual savings is given to the business firms when savers acquire the stocks or ownership interests in business firms. Many savers are unwilling to part with their funds in return for ownership in business firms; however, they are willing to part with their savings by lending them to borrowers. Were debt not possible, there would in all likelihood be a smaller volume of savings and also some portion of the savings would lie idle, thereby depressing economic activity. Debt (or credit), therefore, promotes thrift by providing employment for savings and, much more important, is the means whereby savings are transferred to groups who spend them. In this manner depressed economic activity is averted.

Debt or credit makes for the fullest utilization of available capital. It not only gathers the funds but also helps to apportion them among those who would like to use them. The borrower, it may be presumed, is a more efficient producer than the lender, for otherwise the lender would use the funds in his own productive activities. The actual borrower, moreover, may be assumed to be more efficient than the would-be borrower whom he outbids for the funds. When credit is granted to the highest bidder, it places control over resources in the hands of those who are most likely to provide additional output for the economy.

Although the credit system provides many advantages to society, the volume of credit if not properly managed and controlled, tends to accentuate instability in economic activity. Credit makes possible a rapid increase in the spending power of the public. In an atmosphere of optimism it encourages speculation and overtrading; speculation may become widespread and commodity prices may be greatly inflated. A collapse in credit as an institution ensues when the optimism disappears. Creditors press for repayment of their loans, and debtors find themselves unable to liquidate assets to obtain funds to meet their obligations. The pressure to sell assets leads to price declines, which in turn creates more pessimism. The economic debacle of 1920-1921 was in large measure the outcome of the great expansion in credit granted on commodities in 1919-1920. The history of monetary and fiscal policy is a search for ways of controlling the amount and manner of credit extension so as to mitigate the disadvantages and maximize the advantages stemming from the use of credit.

QUESTIONS AND PROBLEMS

1. a. With what function of money is credit most closely associated?
b. Is credit capital? If not, what is the relation of credit to capital?
2. How is the credit of a prospective borrower from a bank affected by each of the following elements (in your answer indicate, where appropriate, which of the 4 C's of credit is involved):
 - a. Life insurance carried by the applicant. Property insurance.
 - b. The fact that he had gone through bankruptcy in 1929. In 1933.
 - c. His ability to offer as collateral (1) railroad stock, (2) United States savings bonds.
 - d. The fact that his friend is willing to endorse his note but that a surety company asks an unusually high premium on his bond.
 - e. The fact that he plans to buy raw cotton rather than to erect an addition to his mill.
 - f. The fact that he will amortize the loan over the two-year period for which he wants it.
 - g. The fact that the general price level is falling.
3. a. "If we should add up all the wealth of all the individuals in the country we would find that something like half, measured in money terms, was in the form of debt." (E. Clark, *Internal Debts of the United States*, New York, 1933, p. 399.) Explain.
b. During the decade 1929-1939, according to the United States Department of Commerce, the total public and private debt of the United States declined slightly, from \$191 billion to \$185 billion. The private debt fell from \$161 billion to \$126 billion, whereas the public debt rose from \$30 billion to \$59 billion. During the following decade, 1939-1949, the total debt rose from \$185 billion to \$442 billion. The private debt rose from \$126 billion to \$205 billion and the public debt from \$59 billion to \$237 billion. During each decade did the change in the composition as well as the amount of the debt cause any change in the relative burden of debt in the economy?
4. a. Is a mortgage a blessing or a burden to a debtor? Both? Explain.
b. In the depression life insurance companies foreclosed some of their delinquent farm mortgage loans. Was the debtor farmer more justly entitled to public sympathy than was the policy holder of the insurance company?
5. What three classes of credit (see Table 4, page 67) does each of the following credit instruments represent:
 - a. A trade acceptance of a retail lumber dealer.
 - b. A promissory note of a builder of railroad cars.
 - c. A banker's acceptance created by a bank at the request of an importer of hides.
 - d. A United States savings bond.
 - e. Serial 1- to 10-year equipment trust bonds issued by a railroad.
 - f. United States Treasury bills.

- g. A series of notes covering a television set bought on the installment plan by a farmer; a series of notes covering a tractor bought on the installment plan by a farmer.
- h. A checking account in a bank; a savings account.
- 6. a. "The legal principles involved in the law of negotiable instruments grew out of the exigencies of commerce and were intended to facilitate the business requirements of an evolving economic system." Explain.
- b. Explain the conditions which are necessary to make a credit instrument negotiable. May a credit instrument be transferable without being negotiable? Illustrate.
- 7. Write out the appropriate endorsement on checks you hold to accomplish each of the following purposes:
 - a. To make the check negotiable without any further endorsements.
 - b. To limit your own financial responsibility.
 - c. To prevent anyone except your own bank from collecting.
 - d. To make it necessary for the party to whom you give the check to endorse it, thereby making it easier to trace payments.

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PART II

**COMMERCIAL BANKING
STRUCTURE AND OPERATION**

CHAPTER 5

Commercial Banking

THE monetary system includes the complex of institutions that have the ability and authority to issue and retire money, to create and destroy the stock of money available to the public. The three elements in the monetary system include the government, the central bank, and the commercial banks. We have already seen that the stock of money consists of hand-to-hand money (frequently called currency) and demand deposits. By far the largest part of our monetary stock consists of checking deposits, which are debts of the commercial banks payable on demand. The purpose of this part of the book is to explain the mechanism, operations, and principles of commercial bank operations in order to acquire an insight into how the major part of our monetary stock comes into being and how it is destroyed. The succeeding part of the book will be devoted to an exposition of the role of the government and of the central bank in the money creation and money destruction process.

■ COMMERCIAL BANKS

Many institutions go under the general term, banks. Thus, we talk of commercial banks, savings banks, investment banks, industrial banks, etc. We are concerned in this section of the book only with those institutions that create money in the form of demand deposits. Those institutions which hold checking deposits are known as commercial banks.

The term "commercial" banking is misleading. The word "commercial" came into wide usage because of the general belief in

Great Britain a century ago that banks which issued demand liabilities—either bank notes or demand deposits—should restrict their advances to short-term loans for commercial, productive purposes. Thus the banks' liabilities would be supported by commercial paper. Times have changed, and as can be seen in Table 15, our banks are now more industrial than commercial. They combine other activities with their original commercial banking functions. Our use of the term commercial is not so much a matter of correct description of what commercial banks do as it is a matter of convenience in using a widely accepted term.

COMMERCIAL BANK FUNCTIONS

The performance of commercial banks can be broken into (1) the money-creating function and (2) the service-rendering function.

The service functions which commercial banks render to the community include:

1. Serving as paying and receiving stations for hand-to-hand currency.
2. Providing facilities for domestic and foreign remittances.
3. Collecting checks, drafts, notes, and other obligations for their customers.
4. Providing savings departments for their customers.
5. Performing trust services for individuals and corporations.
6. Providing facilities for the safekeeping of valuables.

While these services are important in providing specialized activities for the community they pale into insignificance by contrast with the money-creating powers of commercial banks.

The mainstay of commercial banking is the buying and selling of evidences of debt. These institutions deal almost exclusively in debt instruments and, in the process, create and destroy money. When the banks acquire debt instruments, they credit the deposit account of the seller of the instrument. When they sell evidences of debt to nonbank buyers or when borrowers pay their debts to the banks, commercial banks destroy money balances by debiting the customer's deposit account. Thus, commercial banks create and destroy most of our money supply and are responsible for most of the fluctuations in the stock of money. They are also a major element in the credit market; assuming they have adequate reserves, by making loans and investments commercial banks add to the supply of funds in the credit market, and by reducing their loans and

investments they reduce the supply of funds in the credit market. Thus, by their lending and investing activities commercial banks affect the volume of funds available for loan, the level of interest rates, and the volume of aggregate spending for both consumption and investment. By their lending and investing activities commercial banks play a crucial role in determining aggregate economic activity—both the volume of goods and services produced and the prices at which they are sold.

ORGANIZING A COMMERCIAL BANK

Between 1838 and 1850 a majority of states adopted bank incorporation acts which permitted any group of individuals capable of meeting a standard set of legal requirements to open a bank. This procedure for organizing a bank came to be known as "free banking" and resulted in the establishment of thousands of institutions in this country. There were about 900 banks in 1840; in 1921 over 30,000 banks were operating in the United States. Thereafter, mergers and failures halved the number of banks, and at the end of 1951, 14,089 institutions were in existence.

Free banking has not meant freedom from all restraint in the matter of organizing a bank. Bank statutes have imposed fairly rigid specifications for the granting of a charter. In the case of the federal government, the proposed organization of a national bank is scrutinized to make certain the organizers are competent and trustworthy. Moreover, the existing banking facilities are taken into account in order to evaluate the community need and the likelihood of success of the proposed bank. Since most banks chartered under state laws desire to join the Federal Deposit Insurance Corporation, the proposed bank will, if it is to be approved for deposit insurance, require approval by the Corporation.

BANK MANAGEMENT

Ultimate authority and control of a national bank, as in the case of any corporation, rests with its stockholders. A board of directors of not less than five nor more than twenty-five members is elected annually under a system of cumulative voting available to bank stockholders. The directors must be citizens of the United States; at least three quarters of them must have resided for at least a year in the state in which the bank is located or within fifty miles of its main office and must continue such residence during their term of office; each must own, in his own right, a specified minimum

amount (par value) of stock, ranging according to the size of the bank, from \$1,000 to \$2,500; and none may hold interlocking directorates which are prohibited by law.

In addition to commanding the confidence of the community and keeping in touch with its economic activities, the directors (partly through committees) formulate the major policies of the bank and select officers whose duties are to execute these policies and to conduct the routine operations of the bank. The directors must keep informed of the activities, procedure, and condition of the bank. They are responsible for the diligent, fair, and prudent administration of the institution's affairs. While they normally serve without pay, directors may be held liable, both criminally and financially, for improper performance of their duties; they may be removed from office by the bank supervisor on proof that they have been guilty of violation of the law or have knowingly permitted the continuance of unsound or unsafe practices by the officers.

The departmental organization of commercial banks differs widely with the size of the institution and the range of activities conducted. Officers are elected by the board of directors; the president alone must be a member of the board. The president, vice-president, and cashier constitute the nucleus of the official family of a modern bank, but titles indicate rank rather than specific duties.

CLASSES OF COMMERCIAL BANKS

For the most part each commercial bank is a corporation. In the United States commercial banks include "national" banks and "state" banks,¹ depending upon whether the charter creating the corporation was granted by the federal government or a state government. The decision to incorporate under state or federal law depends upon the preference of the organizers and stockholders of the bank. State banking laws, which vary considerably, are largely patterned on federal legislation governing national banks but are, for the most part, less comprehensive and stringent than federal law. Most of the following discussion is based upon federal banking legislation; where relevant, references to state banking legislation are included.

As seen in Table 6, the 14,000-odd banks can be classified in at least three ways. These classifications indicate the nature of controls which regulate the bank's activities. National banks, subject to the most rigorous controls over their operations, account for one third

¹In a few states there are also private banks, regulated for the most part in the same manner as are incorporated banks.

TABLE 6
COMMERCIAL BANKS IN THE UNITED STATES,
DECEMBER 31, 1951

Banks	Number	Total deposits (billions of dollars)
I. State and national		
National banks	4,939	\$ 94.2
State banks	9,150	70.6
All commercial banks	14,089	\$164.8
II. Member and nonmember		
Member banks ^a	6,837	\$141.0
Nonmember banks	7,252	23.8
All commercial banks	14,089	\$164.8
III. Insured and noninsured		
Insured banks	13,439	\$162.9
Noninsured banks	650	1.9
All commercial banks	14,089	\$164.8

SOURCE: *Federal Reserve Bulletin*.

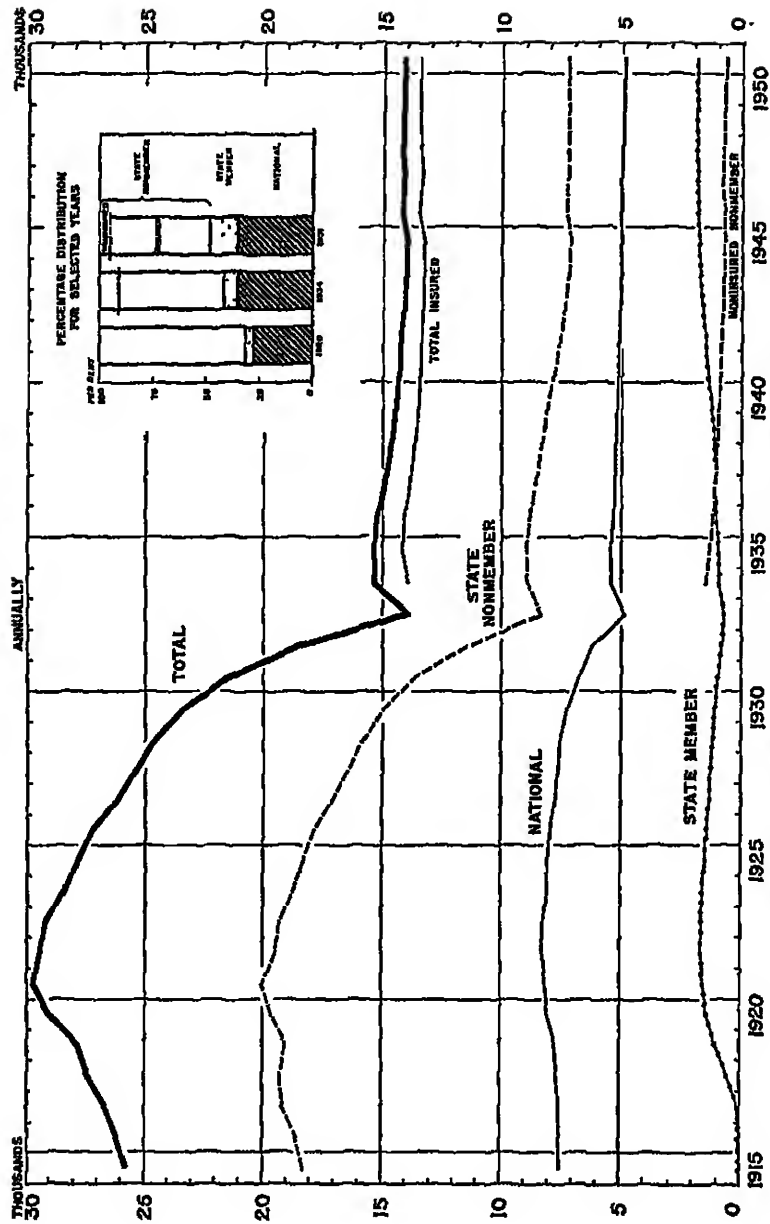
^a Of these, 1,898 banks with \$10.8 billion of deposits were state banks which were members of the Federal Reserve System.

of all commercial banks but hold about 60 percent of all deposits. All national banks are required to be members of the Federal Reserve System; state banks may join, provided they are able to meet the standards set up by the Federal Reserve System. All member banks are subjected to supervision by the Federal Reserve authorities. Over 50 percent of all commercial banks are not members of the Federal Reserve System. They account for less than 15 percent of all deposits. All member banks are required to belong to the Federal Deposit Insurance Corporation. In addition, many state banks are members of the Federal Deposit Insurance Corporation and are subject to regulation by that organization. About 5 percent of all commercial banks, holding less than 2 percent of all deposits, do not belong to the Federal Deposit Insurance Corporation.

■ COMMERCIAL BANK STRUCTURE

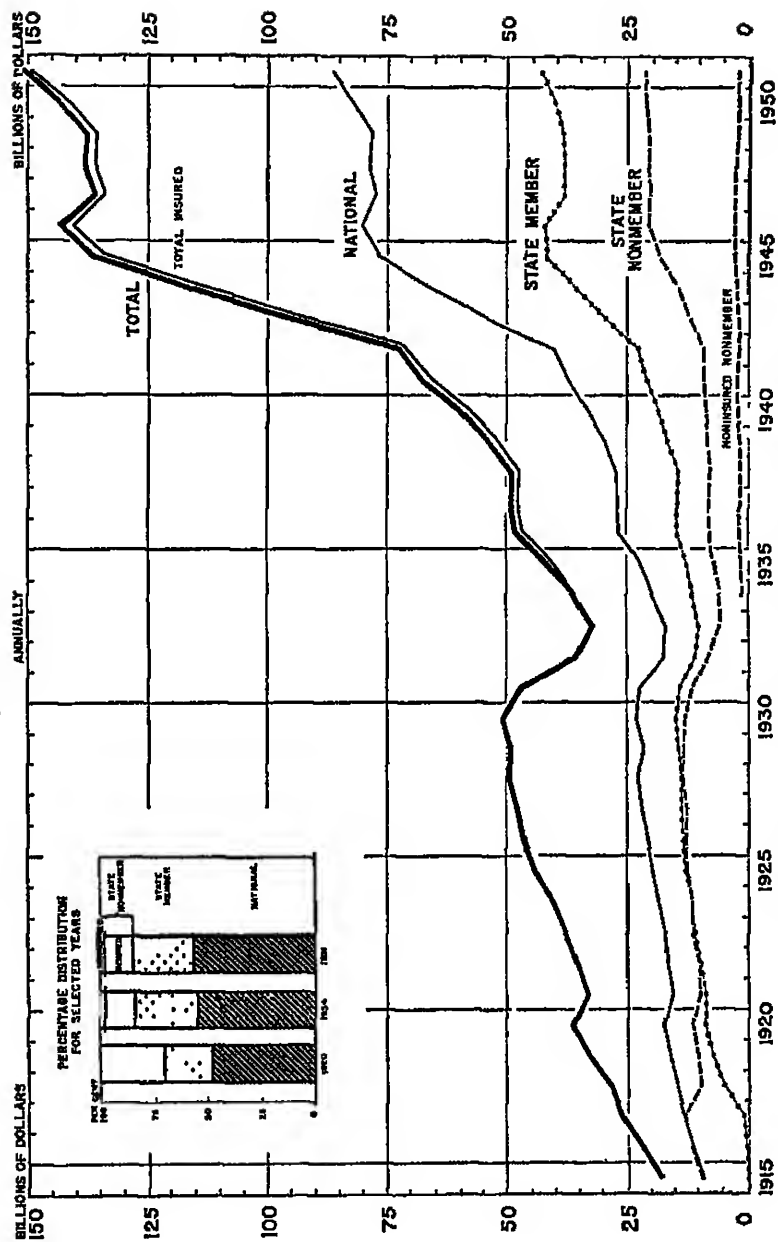
One of the most striking characteristics of our commercial banking system is the large number of banks it contains.

FIGURE 5
NUMBER OF COMMERCIAL BANKS
By Class of Bank



Source: Board of Governors of the Federal Reserve System

FIGURE 5.—Continued
DEPOSITS OF COMMERCIAL BANKS
By Class of Bank



At the end of 1951 there were 14,089 commercial banks in the United States operating 19,242 offices, of which 5,153 were branches. A markedly different situation exists in both Canada and England. Canada has only ten chartered banks with over 3,000 branches; four of these banks dominate the field of commercial banking. England has thirteen joint-stock banks with local offices serving as branches of the central office; five of these banks account for 90 percent of the total commercial banking assets and operate some 8,100 offices. In the United States single-office banks predominate. On December 31, 1951, only 1,361 commercial banks operated more than one office.² Yet the banking system in this country is not homogeneous. It contained (1) independent unit banks, (2) chain banks, (3) group banks, and (4) branch banks.

INDEPENDENT UNIT BANK

An independent unit bank is a corporation which operates one office and which is not related to other banks through either ownership or control by others. The independent unit bank has been the financial counterpart of the independent commercial or industrial enterprise which for decades has been the dominant feature of American economic organization. The bank has its origin in the local community's industry and commerce and in the farming population which it serves. Its activities are integrated with the local economic and social organization, from which its stockholders, directors, and officers are drawn as are also its principal customers, both depositors and borrowers. It is thus peculiarly close to local activities, and its officers are often the chief dispensers of business advice to the community.

The agricultural and rural regions have the largest proportion of small, independent unit banks and the urban and industrial sections the smallest. Changing economic conditions are, however, constantly raising problems for unit banking to solve. In the first place, shifts of population and the broadening of market areas with the development of good roads have caused the local banker to lose the best business of the community to adjacent large centers. Second, the growth of large-scale business has meant a removal of the head offices of many concerns to industrial centers, while those remaining have demanded larger loans than the small local bank has been prepared to make. Finally, earnings have been adversely affected by relatively higher operating expenses, lower interest rates, and greater losses on loans and investments. Throughout the interwar

² See Table B, p. 104.

period these problems have been aggravated by agricultural depression.

CHAIN BANKING

By chain banking we mean any arrangements by which three or more separately incorporated banks, each of which retains its own identity, capital, and personnel, are brought under common control by the use of some device other than a holding company. *Control in varying degrees is exercised through majority or minority stock ownership, fiscal agency relationships with members, and/or interlocking officerships or directorships.*

The advantages of chain banking are slight. The members, it is true, may aid one another by shifting about surplus funds and extensive rediscounting and may coordinate their policies. Concentration of reserves, uniform management, and operating economies arising from larger-scale purchases of supplies and services may assist banks in a banking chain. Whatever its strength, chain banking is counterbalanced by serious elements of weakness. Many chains have consisted almost exclusively of small rural banks and have, therefore, lacked diversification. Then, too, the heads of many chains have been not bankers but promoters, who would pledge the stock of one bank as collateral for loans with which they would purchase the stock of other banks; some have been simply businessmen interested in financing their own activities. Finally, lack of adequate supervision has made the existence of questionable practices difficult to detect. The chain members, subject to different supervisory authorities, might escape simultaneous examination and thus be able to shift assets about, and the persons in control of the entire chain would not be supervised at all.

When compared with the whole banking system, banking offices operating within chains are of relatively minor importance as is depicted in Table 7. On December 31, 1945, the latest date for which data are available, there were 115 chains involving 522 banks which accounted for only \$4.6 billion of deposits. Chain banking was most important in the North Central states.

GROUP BANKING

Chain banking is in some respects similar to group banking, and the distinction between the two is often difficult to detect. In the case of a chain banking system, the control is exercised by individuals. A group banking system is one in which the individual banks are owned or controlled (directly or indirectly) by a

TABLE 7
CHAIN BANKING, DECEMBER 31, 1945

Geographic division	Number of chains	Number of chain banks	Deposits of chain banks (millions of dollars)
United States	115	522	\$4,628
New England	3	11	\$ 127
Middle Atlantic	5	32	405
East North Central	21	71	783
West North Central	46	232	1,931
South Atlantic	5	33	586
East South Central	3	10	20
West South Central	19	79	436
Mountain	8	31	250
Pacific	5	23	90

SOURCE: *Federal Reserve Bulletin* (April 1947), p. 463.

holding company. In some cases the holding company is a bank; in others it does not engage directly in banking.

Group banking seeks to retain the principal advantages of unit banking and to combine with these the virtues of branch banking. Under the typical plan of operation each constituent bank retains its identity and maintains a complete set of officers and local directors. At the same time it enjoys certain technical facilities afforded by centralized administration; these tend to broaden the scope of its service, increase its earnings, and improve its management. The central office can devise advertising material and methods of procuring new business, standardize accounting systems, supply the banks in the group with a common purchasing agency, supervise their investment portfolios, give expert advice on securities to their customers, and furnish superior credit facilities.

Group banking is subject, nevertheless, to certain handicaps. Control of the constituents is less direct and flexible than under the more economical branch banking. While the failure of one member adversely affects all the others, the depositors can look for protection only to the single unit. A more serious disadvantage is the difficulty of supervision, particularly since the managements of some holding companies have used the groups as vehicles for manipulation and speculation. As in the case of chain banking, not all constituents

are examined as one, nor are they all commonly subject to the jurisdiction of the same supervisor. Formerly the holding company escaped supervision on the ground that it was not a bank, but this situation was partly remedied by the Banking Acts of 1933 and 1935. The "holding company affiliate"³ is denied the right to vote the shares of stock of a member bank which it owns unless it obtains a voting permit from the Board of Governors of the Federal Reserve System. Not only is the Board granted discretion to refuse a permit, but also the holding company must agree to allow examiners to visit it, at its expense, at the same time that they examine the affiliated banks and to permit them to examine all the banks owned or controlled by it. The holding company is further required to submit reports requested by the Board pertaining both to its own condition and to that of its constituent banks and to publish financial statements as requested.

The holding company's own operations are restricted too. For example, the company cannot act directly or indirectly as an investment banker. Since June 16, 1938, it has been required to possess readily marketable securities equal to 12 percent of its par value holdings of bank stock, which it must increase to 25 percent out of earnings unless its shareholders are individually liable for its debts; in the latter case it is to proceed to build up a 12-percent fund from earnings.

If after a hearing the Board revokes a voting permit, it may require any or all of the affiliated state member banks to forfeit their membership in the Federal Reserve System. Moreover, state member banks must, under penalty of expulsion, obtain from their holding company affiliates an agreement subjecting the latter to the conditions applicable to affiliates of national banks. A national bank whose affiliate's voting permit is revoked can no longer receive deposits of United States government funds or pay dividends to the holding company; the Board in its discretion may even forfeit the charter of such a bank.

Under the present regulations a holding company affiliate is not required to obtain a voting permit. If it can dominate the operations of the subsidiary bank without voting the bank's shares, it can escape from submitting to the controls which arise from the voting permit requirements. In addition, if the holding company controls

³ Defined as owning or controlling directly or indirectly a majority of the shares of a member bank, or more than 50 percent of the shares voted in the preceding annual election of directors, or controlling the election of a majority of the directors, or for the benefit of whose stockholders or members substantially all the stock of a member bank is held by trustees.

less than a majority of the outstanding shares of the bank and less than 50 percent of the shares voted for the election of directors at the last election, *it is not a holding company affiliate*. It does not, therefore, have to obtain a voting permit to enable it to cast its votes at the stockholders' meeting. The Board of Governors of the Federal Reserve System has repeatedly asked for passage of legislation which will improve its controls over holding company banking. Specifically, it has requested that holding company operations be placed under the same regulation as are banks. Moreover, it has urged that the term "holding company affiliate" be redefined to meet the needs for adequate control.

The Board has taken direct action against holding company banking. It required, as a condition of membership in the Federal Reserve System, that no part of the stock of a bank requesting membership should be acquired by the Transamerica Corporation without permission of the Board. In 1948-1949 it required the Transamerica Corporation to appear before it to answer charges of violating the Clayton Antitrust Act, which prohibits holding companies that tend to restrain competition or to create monopolies, and in March 1952 handed down an adverse finding.

There has been a marked decline in group banking since 1931. As is seen in Table 8, there were thirty-three groups, consisting of

TABLE 8
GROUP BANKING, DECEMBER 31, 1945

Geographic distribution	Number of groups	Number of group banks	Deposits of group banks (millions of dollars)
United States	33	387	\$18,142
New England	4	31	\$ 2,301
Middle Atlantic	6	45	2,589
East North Central	3	32	1,144
West North Central	6	138	2,402
South Atlantic	5	41	1,270
East South Central	2	18	451
West South Central	3	11	772
Mountain	2	35	850
Pacific	2	36	6,363

SOURCE: *Federal Reserve Bulletin* (April 1947), p. 462.

387 banks which held about \$18 billion in deposits on December 1, 1945.

BRANCH BANKING

A single bank corporation, having one group of directors and one charter, that directly owns and operates two or more banking offices, is referred to as a branch bank. Each local office is supervised by a manager appointed by the officers of the bank. Both within and without the banking community, sharp differences of opinion are expressed on the question of branch banking.

The advocates of branch banking stress the following virtues of this system. Branch banking provides greater strength and stability than unit banking for several reasons. First, it facilitates diversification of activities, particularly if the geographic area covered by a set of branches is sufficiently widespread. By thus averaging risks it reduces them and minimizes danger of failure. Second, it raises banking standards. The bank can hire a competent managerial force, capable of understanding and handling technical problems and of providing broad-gauged judgment in the operation of the institution. Although the trained manager of the local branch will have less intimate knowledge of community conditions and will spend only a limited time at the branch, he will be able objectively to appraise local credit conditions and to refer to the head office decisions regarding large loans. The bank, too, will be in a position to control relative credit expansion in different sections. Thus, development in certain sections may be less rapid than under unit banking, but it will proceed along a steadier path. Third, the concentration of financial resources makes possible more rapid mobilization of resources in times of emergency and more effective seasonal movement of funds. Branch banking does not, as some contend, draw funds away from the local community to distant financial centers, but it can bring rates of interest in different sections into greater conformity. Finally, branch banking makes complete banking services available to the smallest communities. Some branches may, if necessary, operate at a loss, although it is generally true that overhead expenses at branches are smaller than at unit banks. The cost of rendering banking service is correspondingly reduced by the branch system, so that the profits of banks may be increased to an adequate figure and the strain of inadequate profits, which weakened all too many small country banks prior to 1930 may be obviated.

The services that branch banking makes available to the community depend in large part upon its scope. Local branch banking, with

the branches confined to the community in which the head office is situated, provides greater convenience to the public and whatever safety and lowered costs that are attributable to an increase in size. Branch banking on a national scale, which may be in many respects the most advantageous arrangement, is less practicable for the United States than for smaller countries like England, France, or Germany. Many proposals have been put forward for the spread of branch banking over a limited territory, to restrict branches either to the state, the trade area, or within the Federal Reserve district in which the bank is located.

The arguments against branch banking may be summarized as follows: Independent unit banks will know the needs of their community and can meet these needs on a more personal basis. Incompetently managed large banks, if they do fail, may bring widespread disaster and even imperil the credit of an entire nation. In this connection one may recall the collapse of two of the "Big Four" Italian banks in 1921 and the Detroit difficulties that led to the Michigan banking moratorium which was a leading factor in bringing about the national banking holiday in 1933. Moreover, proper examination of banks with branches may be more difficult than in the case of unit banks. Perhaps the chief argument against branch banking is the possibility of monopoly arising in the banking field. This point is clearly stated by the Federal Deposit Insurance Corporation as follows: ⁴

The business of lending money is well suited to private initiative and is best performed under competitive conditions. Monopoly in banking is a threat to American traditions, both because it limits the opportunities to engage in the business of banking, and because it provides an opportunity for favoritism in the extension of credit which may foster monopolies in other industries. The growing tendencies toward monopoly in the banking business are serious, and prompt action should be taken to curb them. Monopolistic practices in the banking system have contributed to the growing demand for credit agencies operated by the Federal Government. The Corporation believes that the maintenance of genuine competition among banks is a much better solution to this problem than the further extension of governmental lending activities.

A partial monopoly which develops when one bank obtains a disproportionate percentage of the total banking resources of an area may have a serious effect on the economic life of the district. Another monopolistic tendency which has aroused customer discontent is the agreement among banks, in some areas, to fix charges and limit services. Bankers can do much to improve this situation by making active efforts to fit their

⁴ *Annual Report of the Federal Deposit Insurance Corporation (1944)*, pp. 10-11.

services to the needs of the public rather than by relying upon restrictive agreements for profits.

Partial monopolies over large areas may develop both by means of branch banking and through the holding company device. The Corporation recommends that such branch banking as is permitted by the laws of the respective States be strictly regulated so that no bank will control a disproportionate percentage of the total banking resources or offices of an area. Holding companies not only tend to become monopolistic, but increase the problem of supervision. The ease with which assets may be transferred from one affiliated corporate unit to another and the possibility of the manipulation of the accounts of these enterprises make adequate examination of affiliated banks and the appraisal of their condition and capital position extremely difficult. The Corporation recommends that Congress enact legislation which will prohibit the future creation of holding companies and which will require the liquidation of existing holding companies after allowing a reasonable time for orderly distribution to their own stockholders of the bank stock which they now hold. The Corporation believes that such legislation is distinctly preferable to the enactment of further regulatory laws in the bank holding company field.

Meanwhile, the argument over the relative merits of independent unit banks and branch banking continues. The narrow legal prescriptions on branch banking have been relaxed over the years. Some state laws flatly prohibit branch banking; others permit state-wide branches; still others permit branches, but only within the main office city, the main office county, or some other area smaller than the state.

In the United States branch banking prevailed until the Civil War. The First and Second Banks of the United States were branch banking systems. Branch banking was not specifically authorized by the National Bank Act of 1863, and for many years it was virtually nonexistent in this country, although it was permitted under some state laws. The modern era of branch banking in the United States dates from the enactment in 1909 of California's law permitting banks to establish multiple offices. Amendments to the Federal Reserve Act have liberalized federal legislation relative to branch banking.

Federal law now permits national banks to establish branches in states where branch banking is expressly permitted. The following limitations apply:

1. Approval of the Comptroller of Currency must be obtained.
2. The geographical range over which branches may be established is subject to the same limitations as are state banks.

Wherever state banks are limited to city- or county-wide branches, national banks are similarly limited.

3. No national bank may establish a branch outside its home city unless the aggregate capital of parent and branches equals the minimum required capital for setting up a national bank at the location of each banking office, and must have the capital stock required by state law in like circumstances.
4. Seasonal agencies (to receive deposits and cash checks) may be established in resort communities within the county in which the main office is located (where the state law allows at least county-wide branch banking) without incurring any capital requirements if the place is not served by any other bank.
5. State member banks may establish new branches in the same manner and under the same terms as those described for national banks except that permission must be obtained from the Board of Governors of the Federal Reserve System.
6. Insured nonmember banks may not establish or move a branch without the consent of the Federal Deposit Insurance Corporation.

The relaxation of both federal and state legislation on branch banking is reflected in the growth of branch banking in this country (Table 9). About 10 percent of all the commercial banks operated

TABLE 9
BRANCH BANKING IN THE UNITED STATES IN SELECTED YEARS

Year	Number of commercial banks operating branches	Total number of branches			Location of branches	
		Total	National	State	Home city office	Outside home city
1900	87	119	5	114	25	94
1910	292	548	12	536	271	277
1920	580	1,281	63	1,218	773	508
1930	751	3,522	1,042	2,480	2,391	1,131
1940	954	3,525	1,539	1,986	1,602	1,923
1950	1,291	4,843	2,230	2,613	2,035	2,808
1951	1,361	5,153	2,370	2,783	2,173	2,980

SOURCE: *Banking and Monetary Statistics; Federal Reserve Bulletin* (May 1951, May 1952).

branches at the end of 1951; these banks and their offices accounted for about one third of all the commercial banking offices in the country. The proportion of commercial bank deposits held by branch banking systems was slightly over one half of all the commercial bank deposits in this country on June 30, 1949, the latest date for which information is available.

■ BANK CONSOLIDATION

Although there are thousands of banks in the United States, a relatively small number do a large fraction of the banking business transacted. The principal method by which the concentration of banking resources is effected is the consolidation (merger) of existing banking institutions.

The bank merger movement has been much slower in developing in the United States than in foreign countries. In Great Britain, for example, the 554 private banks with 681 branches that operated in 1825 had dwindled to only 2 private banks with 2 branches and 13 joint-stock banks with 8,081 branches in 1924. The bank merger movement did not gain momentum in the United States until the 1920's. The combined result of bank mergers and suspensions was a reduction of over 50 percent in the number of banks in this country between 1920 and 1951. Over this same period the total resources of all banks more than trebled with the result that the average size per bank in the United States was six times as great in 1951 as in 1920.

A variety of factors account for the consolidation movement in American banking. First, the movement toward branch banking led to bank mergers in which the merged bank became a branch of the multiple-office banking system conducted by a single bank corporation. Secondly, and particularly during the depression, stronger banks often took over weaker ones in order to prevent the absorbed bank from failing. Third, acquisition of other banks is often a convenient and speedy way for a bank to acquire other lines of business (as for example, trust business). Fourth, rivalry among bankers for size, power, and prestige sometimes serves as motivation for mergers. Finally, bank mergers have been consummated in order to increase a bank's capitalization and deposits, thereby enabling the institution to furnish more adequate service to its customers. The growth in the size of business enterprises increased the credit needs of these firms. Since the maximum unsecured loan to one borrower is limited to 10 percent of a bank's capital and surplus, an increase in the bank's capital base permits a larger maximum loan

limit. The increased resources of the merged bank enable it to grant the larger loans made permissible by the increased capitalization. .

■ BANK FAILURES^a

One outstanding characteristic of United States commercial banking is its high failure rate. In fact, the failure rate among commercial banks in this country by far exceeds that of any other important commercial banking system in the world. As is evident from Figure 6, prior to 1921 the bank failure rate was lower than the commercial failure rate, but thereafter, through 1933, the reverse was true. During the 1921-1930 period the commercial failure rate was about the same as the rate prevailing during 1893-1913, whereas the bank failure rate increased threefold and moved up even more rapidly between 1930-1933. Since 1934 the bank failure rate has been below that for commercial failures.

More extensive data depicting the epidemic of bank suspensions are available for the period following 1920. As shown in Table 10,

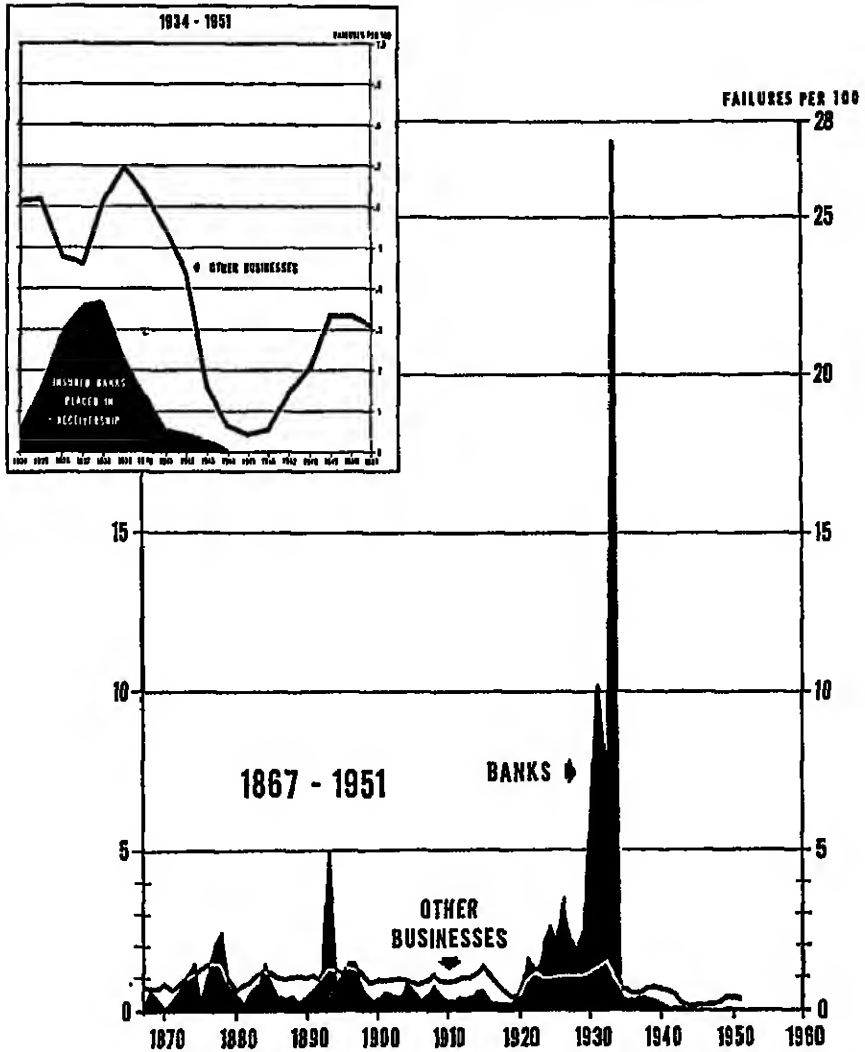
TABLE 10
NUMBER AND AMOUNT OF DEPOSITS OF SUSPENDED BANKS,
1921-1951

Year	Number	Deposits (000 omitted)
1921-1929	5,411	\$1,623,000
1930-1933	9,096	6,830,214
1934-1942	330	137,362
1943-1951	14	11,969

SOURCE: *Federal Reserve Bulletin*.

^a Strangely enough, the term "bank failure" despite its wide use defies precise definition. Official data on bank suspensions, for instance, cover all banks closed to the public by the supervisory authorities or by the banks' boards of directors on account of financial difficulties, even if the same banks reopen subsequently. They do not, however, include banks closed only during a special holiday declared by civil authorities, or institutions which, without actually closing, obtain agreements from depositors to waive or defer the withdrawal of a portion of their deposits. Moreover, the figures understate the actual number of "difficulties" by excluding cases in which capital is subscribed by interested parties or in which banks are merged or the assets sold to another going institution without formal suspension. The Reconstruction Finance Corporation was a potent factor in keeping banks open in 1932, and the arbitrary rules for the evaluation of bank investments prevalent at that time served the same purpose.

FIGURE 6
FAILURES IN BANKING AND BUSINESS, 1867-1951



SOURCE. Division of Research and Statistics, Federal Deposit Insurance Corporation.

more than 14,000 bank failures occurred between 1921 and 1933; the total amount of deposits frozen for varying periods in these banks amounted to over \$8 billion. Losses to depositors in banks suspended during these years are estimated in excess of \$2 billion. Stockholders not only lost all or a large part of their investment, but in addition often paid voluntary assessments in an effort to keep their bank going.

Examination of the data on bank suspensions enables us to draw the following conclusions regarding the classes of banks that failed.

1. The banks which suspended operations were predominantly small institutions. Over half the number of such banks had a capital of \$25,000 or less. It is also apparent from Table 11 that more banks with small capital suspended operations than banks with larger resources.
2. The banks which failed were located chiefly in small towns. Since, with the exception of banks in outlying districts of big cities, the small banks are located in the smaller towns and cities and since the failure rate is higher for small banks, it may be concluded that bank suspensions have been more frequent in small towns. One third of the bank failures from 1921-1936 occurred in places with less than 500 inhabitants. Table 11 shows further that the proportion of failures is higher for banks in small communities than for those located in larger towns and cities.
3. Banks which were not members of the Federal Reserve System suffered the heaviest mortality. During the period 1921-1936 the 2,719 national bank failures meant that 33.9 per 100 national banks active on June 30, 1920, suspended operations; this percentage is to be compared with 43.1 for the 592 suspended member state banks of the Federal Reserve System and with 56.6 for the 11,033 suspended nonmembers. Indeed, it was the small state banks ineligible to join the Federal Reserve System which accounted for one third to one half the total number of suspensions.
4. The suspensions occurred largely in certain sections of the country. It will be observed from Table 12 that during the 1920's the decimation of banks was heavier in agricultural states of the midwest and southeast and the Rocky Mountain states, whereas after 1929 the northeastern states, hitherto immune, were also affected.

Why have commercial bank failures been so common in this country? The foregoing analysis suggests a number of explanations.

TABLE 11
SIZE AND LOCATION OF SUSPENDED BANKS, 1921-1936

Capital stock	Number suspended	Number per 100 active banks on June 30, 1920	Population of town or city	Number suspended	Number per 100 active banks on June 30, 1936
Less than \$25,000	4,661	52.7	Less than 500	4,929	56.3
\$25,000	3,441	52.9	500 to 999	2,932	54.4
\$25,001 to \$49,999	1,394	57.1	1,000 to 2,499	2,904	49.7
\$50,000	2,178	47.7	2,500 to 4,999	1,321	48.0
\$50,001 to \$99,999	628	50.6	5,000 to 9,999	814	39.7
\$100,000	1,081	37.6	10,000 to 24,999	715	40.9
\$100,001 to \$199,999	407	46.6	25,000 to 49,999	287	38.2
\$200,000 to \$499,999	723	45.1	50,000 to 99,999	276	41.1
\$500,000 to \$999,999	175	42.9	100,000 and over	765	43.4
\$1,000,000 to \$4,999,999	111	28.7			
\$5,000,000 and over	9	19.1			
Not available	135	...			
Total	14,943	49.7	Total	14,943	49.7

SOURCE: *Federal Reserve Bulletin* (1937), pp. 897, 900, 901, 906.

TABLE 12
NUMBER OF SUSPENDED BANKS, 1921-1936, BY REGIONS

Geographic division	Average number of active banks 1921-1936	Annual rate of suspensions per 100 active banks		
		1921-1936	1921-1929	1930-1933
New England	659	1.3	0.2	5.1
Middle Atlantic	2,714	1.7	0.2	6.4
East North Central	4,800	3.8	0.8	14.0
West North Central	6,505	5.1	3.5	12.5
South Atlantic	2,411	4.9	3.6	11.7
East South Central	1,620	2.9	1.2	9.3
West South Central	2,567	3.3	2.3	8.3
Mountain	984	5.3	4.9	9.1
Pacific	1,032	2.6	1.1	8.6
Total	23,292	3.9	2.2	10.7

SOURCE: *Federal Reserve Bulletin* (1937), p. 887.

1. Whatever else may be the relative merits of unit and branch banking systems, the evidence supports the contention that unit banking is not well equipped to withstand adversity. The shortcomings of unit banks—lack of diversification of activity, narrow approach to basic problems, frequently resources and earnings inadequate to support competent banking management, and excessive competition—all explain the high failure rate among these kinds of banks. The multiplicity of units has caused certain sections to be "overbanked," and interestingly enough, the areas of greatest density of banks per capita coincided with the areas where failures were proportionately highest. Since the epidemic of failures, there have been numerous bankless towns and even bankless counties so that the pendulum would seem to have swung far in the opposite direction in certain sections.
2. Another explanation of bank suspensions may well be poor banking and inadequate governing legislation and supervision. Prior to 1920 the closings of banks were attributed to such isolated situations as defalcations rather than to any underlying weakness. The Comptroller of the Currency has held, however, that in half of the national bank failures in which dishonesty

was a factor the management was incompetent as well. Legislation and supervision have been largely competitive, and too often the dominant tendency has been to favor special interests, such as agriculture. The record seems to indicate clearly that legislation and supervision cannot substitute for ability, conservatism, and a sense of stewardship.

3. A third explanation of the high failure rate among American banks is the recurrence of depressions in economic activity in our country. Throughout the 1920's agriculture continued to be depressed and the renewed collapse of agricultural prices in 1929-1930, aggravated by severe drought, accelerated the pace of bank failures in the early 1930's. This explanation is at best partial, however, for we must remember also that ably managed banks did not fail, even in the most stricken agricultural areas, and that during the 1930's failures spread to the industrial regions. Bank failures and depressions are mutually aggravating. Depressions tend to cause bank failures, and in turn, bank failures tend to depress economic activity.

Bank failures are considered more dangerous and undesirable than failures of other kinds of business firms for a number of cogent reasons. In the first place, widespread bank failures reduce the moneyness of checking deposits. Moreover, a bank failure, at least temporarily, freezes a portion of the nation's money supply, thus preventing people from using these deposits to purchase the products turned out by our economy. A decline in spending may bring on a depression and will, in any case, aggravate one already present. The failure of one bank may frighten depositors in other banks who in attempting to withdraw their deposits will cause widespread bank failures. Withdrawals of deposits from banks will decrease bank reserves and lead to credit restrictions by the banks which may upset economic activity. Finally, bank failures may bring on pessimism in the business community, thus initiating a depression or aggravating one already in existence. In an attempt to minimize, or better still, avoid bank failures our country has surrounded bank operations with a maze of regulations unmatched in any of the other leading commercial nations.

■ BANK OPERATION AND PUBLIC REGULATION

Although the majority of commercial banks in the United States are organized as private, independent business units, virtually every phase of their operation is in some way affected by

governmental regulation or control. These controls fall into two broad categories. On the one hand, there exists a framework of statutory rules and regulatory agencies designed to ensure that each individual bank conforms to accepted standards of financial soundness. Toward this end banks are required by law to submit bank statements to the supervisory body or bodies under whose jurisdiction they fall. In addition, supervisory bodies make periodic examinations of banks and have the power to penalize those banks which do not comply with the standards of performance required of them.

The second, and growing, set of controls is concerned with the problem of the soundness, not of the individual bank per se, but of the commercial banking system as a whole. These controls have arisen because the history of banking has shown that the controls provided by the first set of regulatory devices do not, in themselves, provide adequate safeguards. Circumstances have arisen under which banks which would normally conform to the highest standards required by the specific controls are unable to withstand the forces generated by the monetary and economic system as a whole. These financial panics, as they are sometimes called, and the protracted "runs" on banks, which are both the cause and the effect of the panics, arise from over-all forces and have a nation-wide impact on banks. Therefore, their prevention requires general rather than specific safeguards. This aspect of the control problem will be discussed at length in the section of the book which deals with central banking.

We shall return at this point to the more limited, but nonetheless important, aspects of regulation designed to maintain sound practices on the part of each individual banking unit within the system. The justification for such extensive regulation of banks was explained by the Board of Governors of the Federal Reserve System in the following terms: ⁶

Banking is a business vested with a public interest. The current financial needs of commerce, industry, and agriculture are met largely through the individual actions of the 15,000 separate banks in operation in this country. The volume of their loans and investments has a direct relationship to the volume of business activity, and the deposits created by these loans and investments, as they pass from hand to hand, are the medium through which the bulk of the nation's payments are made.

Successful operation of our banking institutions is, therefore, necessary to the orderly functioning of the nation's business. It is not merely the

⁶ *Annual Report of the Board of Governors of the Federal Reserve System (1938)*, pp. 1-2.

concern of those who have invested their money in the banking business, nor merely of those who have entrusted their deposits to the banks. It is also a matter of public concern, both because of the importance of safeguarding deposits and because of the part that the banks play in maintaining the flow of goods and services through the channels of production and distribution, from the farm, the forest, and the mine to the ultimate consumer. Interference with the orderly functioning of banks, whether through bank failures or otherwise, results in the elimination of an habitual source of financial assistance on which the banks' customers have relied, and in the loss or tying up of deposits belonging to the depositors who have made their business and personal plans in the assurance that they have this money at their disposal. The degree of eagerness of banks to extend credit and their ability to do so have an important influence on the course of business, because these factors result in an expansion or a contraction of loans and investments, and in changes in the volume of deposits, which are the country's principal medium of exchange.

Thus, the laws that regulate banking and the regulatory and supervisory bodies that examine banks and enforce compliance play an important role in bank management. In the relevant places in this text we call attention to these laws and rulings as they apply to the specific banking operation under study.

It is important to stop at this point to puzzle over the fact that despite the maze of laws and regulations that affect bank operations in the United States our economic history has been plagued by extensive bank failures. One very likely explanation of this paradox is the fact that competition between federal and state governments in chartering banks has led to relaxation of sound banking practices in this country. Activities in the chartering, supervision, and examination of commercial banks are divided among three federal agencies with overlapping jurisdiction—the Comptroller of the Currency, the Federal Reserve, and the Federal Deposit Insurance Corporation—and forty-eight state supervisory authorities. Under present arrangements only a small number of federal banking laws and regulations apply to all banks regardless of their classification (see Table 13). Most of these laws and regulations become effective only if a bank voluntarily elects to submit itself to them. So long as it is possible for a bank to shop around to escape from what it considers rigid federal regulation, it will be difficult to obtain satisfactory standards of bank regulation in this country.

TABLE 13

SOME OF THE PRINCIPAL PROVISIONS OF FEDERAL STATUTES
REGULATING THE PRINCIPAL CLASSES OF BANKS [†]

-
- I. Applicable only to national banks:
 1. Restrictions on real estate loans.
 2. Regulations governing the exercise of trust powers.
 3. Restrictions on acting as insurance agent.
 4. Restrictions on acting as real estate loan broker.
 5. Requirement that one tenth of earnings be transferred to surplus until surplus equals common capital.
 6. Prohibition against holding other real estate for more than 5 years.
 7. Restrictions on absorption of another bank.
 8. Limitations on indebtedness which bank may incur.
 - II. Applicable only to national banks and to state banks that are members of the Federal Reserve:
 1. *Limitations on total loans to one borrower.* (State member bank loans to one borrower are not subject to the limitations applicable to national banks, but loans in excess of the limits applicable to national banks are not discountable at the Federal Reserve.)
 2. Regulations governing purchase of investment securities.
 3. Prohibition against purchasing stocks.
 4. Prohibition against engaging in underwriting of investment securities and stocks.
 5. *Restrictions on loans to executive officers.*
 6. Restrictions on dealing with directors.
 7. Restrictions on interlocking directorates or other interlocking relations with other banks and with securities companies.
 8. Prohibition against bank having less than 5 or more than 25 directors.
 9. Provision authorizing supervisory authority to remove officers and directors for continued violations of law or continued unsafe or unsound practices.
 10. *Prohibition against affiliation with securities company.*
 11. Restriction on holding companies affiliates.
 12. Restrictions on bank stock representing stock of other corporations.
 13. Limitations on loans to affiliates.
 14. Requirements of reports of affiliates and publication thereof.
 15. Requirements for examination of affiliates.
 16. *Limitations on investment in bank premises.*

[†] Congress of the United States, Joint Committee on the Economic Report, Report of the Subcommittee on Monetary, Credit, and Fiscal Policies, *Monetary, Credit and Fiscal Policies*, 81st Cong., 2d Sess., Senate Document No. 150 (Washington, 1950), pp. 88-89, modified by the authors.

17. Minimum capital requirements.
 18. Minimum capital requirements for branches.
 19. Prohibitions against loaning on or purchasing own stock.
 20. Restrictions on withdrawal of capital and payment of unearned dividends.
 21. Requirement that reserves specified in the Federal Reserve Act be maintained.
 22. Requirement for specific number of condition reports annually and for publication thereof.
 23. Requirements in connection with the par clearance collection system.
 24. Prohibition against false certification of checks.
 25. Limitations on acceptance powers.
 26. Prohibition against acting as agent for nonbanking institutions in making loans to brokers and dealers in securities.
 27. Limitations on loans to one borrower on stocks or bonds.
 28. Limitations on aggregate loans to all borrowers on stocks or bonds.
 29. Limitations on deposits with nonmember banks.
- III. Applicable to national banks, state member banks, and nonmember banks insuring their deposits with the FDIC:
1. Requirement for approval of establishment of branches.
 2. Restriction on consolidating or merging with noninsured bank, assuming liability for such bank's deposits, or transferring assets to such bank for assumption of deposits.
 3. Restrictions on payment of interest on deposits.
 4. Restriction on paying time deposits before maturity or waiving notice before payment of savings deposits.
 5. Prohibition against payment of dividends while delinquent on deposit insurance assessment.
 6. Prohibitions against loans or gratuities to bank examiners.
 7. Provision authorizing supervisory authority to publish examination report if bank does not follow recommendations based thereon.
 8. Provision authorizing supervisory authority to require that banks provide protection and indemnity against burglar, defalcation, and similar insurable losses.
- IV. Applicable to all banks:
1. Provisions regulating loans for the purpose of purchasing or carrying securities registered on national securities exchanges.
 2. Provisions regulating consumer credit.*
 3. Provisions regulating real estate credit on new home construction.*
 4. Laws granting certain tax advantages in connection with the operation of a common trust fund if operated in conformity with regulations of the Board of Governors.

* Temporary legislation.

QUESTIONS AND PROBLEMS

1. After conference with your local commercial banker, list the comparative advantages and disadvantages of:
 - a. A national charter for a bank.
 - b. A state charter for a bank.
2. a. If you were organizing a new local commercial bank, what would be the basis on which you select directors?
 b. In approaching these individuals, what reward could you offer them for serving?
3. To what general factors do you attribute the growing concentration of banking that has occurred in the United States?
4. a. Distinguish between group and chain banking.
 b. What is a bank "holding company affiliate"? Explain the problems arising in connection with their regulation. After referring to the March 1950 issue of the *Federal Reserve Bulletin*, analyze the Board of Governors' proposals for remedial legislation.
 c. By reference to appropriate issues of the *Federal Reserve Bulletin* (see annual index found in the back of the December issue of each year's *Federal Reserve Bulletin*) trace the developments in the relations of the Board of Governors with the Transamerica Corporation.
5. a. Explain the different rates of growth in Table 9 in the establishment of national and state bank branches and in the establishment of home city and outside branches.
 b. By reference to appropriate issues of the *Federal Reserve Bulletin* trace the changing status of branch banking under the McFadden Act of 1927, the Banking Act of 1933, and the Banking Act of 1935.
6. a. In what ways did the technique employed in 1933 in handling banks which were in difficulties differ from that previously employed? Why was it used?
 b. J. H. Williams stated in 1933 that "our chief need is not reform of the Federal Reserve System but the much more fundamental reform of our commercial banking structure, organization and practice." (*American Economic Review, Supplement*, 1933, p. 104.) Prepare a list of improvements that you think might aid in preventing bank failures.

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mercantile debts by book entry. In addition to the public banks, there arose private banking houses, which, like their counterparts in Roman times, were engaged in money changing, foreign exchange operations, money lending, as well as in negotiating state loans, tax collections, and stockjobbing.

In England similar developments took place in Elizabethan times. The goldsmiths attained prominence in the banking field after 1640, when Charles I seized deposits of bullion amounting to some £130,000 which were at that time held in the Tower of London by English merchants. Thereafter the merchants, looking elsewhere for a safe depository, came to place their funds with the goldsmiths. It did not take the goldsmiths long to discover that although these deposits were payable on demand, they were not all withdrawn together. *They began to lend funds entrusted to their care and to earn interest on these funds.* Having successfully discovered that only a small reserve in cash needed to be maintained and that the rest of the funds could be lent out to earn income, the goldsmiths competed for deposits. This led to the practice of paying interest on deposits. Ultimately the loan and deposit business superseded the smiths' earlier activities as bullion dealers and craftsmen.

Along with this development merchants began to make payments, not by withdrawing bullion which they owned on deposit, but by writing an order directing the goldsmith to pay a specified amount to a designated party. These orders are the prototype of the modern check. Alternatively, merchants could effectuate payments by the use of receipt notes given them by the goldsmith at the time they made the original deposit of gold. These goldsmith "notes" represent the earliest form of the bank note. After the Restoration the goldsmith bankers began to approximate the present technique of making loans by lending in the light of anticipated receipts and withdrawals; in making loans they issued notes and credited deposit accounts as their judgment dictated, without having previously received bullion on deposit. The unprecedented growth of industry and trade in the nineteenth century brought with it an unprecedented demand for credit—and it was this period which saw the full development of commercial banking as we know it today.

■ THE SIGNIFICANCE OF COMMERCIAL BANKING

The diverse origins of commercial banking are reflected today in the large number of functions which commercial banks perform. Many of these functions are similar to activities performed by other financial institutions existing in the modern

economy. Like savings banks and the postal savings system, commercial banks are depositories of time or savings deposits on which interest is paid; like the post office and the American Express Company they sell traveler's checks; like savings and loan associations, savings banks, and life insurance companies, they extend mortgage credit. In their lending activities commercial banks compete with such financial institutions as commercial finance companies, sales finance companies, and factors which provide individuals and business firms with funds. Moreover, in buying securities commercial banks engage in investing operations similar to those of insurance companies, savings banks, trust companies, and others.

But in one respect commercial banks are unique. The feature which distinguishes commercial banks from other financial institutions is their ability to provide the community with money in the form of deposits subject to withdrawal by check. We have seen earlier that the stock of money consists of currency plus demand deposits on the books of the commercial banks. The largest segment of our money stock consists not of currency but of the demand deposit accounts with the commercial banks against which the owners of the accounts can issue checks. Payments by means of checks accounted in 1951 for over 90 percent of all payments made in this country. Thus the answer to the question of what determines the volume of our total money stock lies largely in the explanation of those factors which determine the total volume of checking accounts in existence. It is because the banking system can and does add to or subtract from the stock of money available to the community that so much attention is devoted to its operations as contrasted with those of other financial institutions. We shall devote the remainder of this chapter to a detailed examination of how the activities of the banks result in the *creation and destruction of demand deposits*.

■ BANKING SYSTEM WITH A SINGLE BANK

In order to clarify the nature of commercial bank operations, we shall assume there is only one bank in the country. We shall then trace the effects of the bank's operations as they are reflected in changes in that bank's balance sheets. Later a greater measure of reality will be introduced by dealing with a banking system consisting not of one bank but of a large number of banks. We may anticipate this later discussion by stating categorically that the deposit-creating power of a banking system consisting of one bank, or thousands of banks, will be the same.

A group of citizens get together and decide to organize a bank. After the organizers go through the legal formalities, the banking authorities issue a charter to the A B C Bank which becomes a member of the Federal Reserve System. The bank sells \$1 million of capital stock at par which the public purchases by paying currency. The bank uses \$200,000 to purchase a building and equipment and is now open for business. Balance Sheet 1 portrays its condition at the time of opening.

BALANCE SHEET 1

<i>Assets</i>		<i>Liabilities and Capital Account</i>	
Cash	\$ 800,000		
Building and equipment	200,000	Capital stock	\$1,000,000
	<u>\$1,000,000</u>		<u>\$1,000,000</u>

DEPOSIT OF CASH AND LEGAL RESERVE REQUIREMENTS

Some of the community's citizens deposit \$200,000 of currency in order to obtain the convenience of being able to make payments by drawing checks against their demand deposits with the bank. The bank has an added \$200,000 in cash, and liabilities in the form of demand deposits owned by the public have also been added by a like amount. The supply of currency outside the banks has fallen by \$200,000, but the supply of demand deposits has increased by \$200,000. The total supply of money has remained constant.

As a member of the Federal Reserve System, the bank is required by law to maintain a reserve against its own demand deposits with the Federal Reserve bank in its district. For illustrative purposes we shall assume the reserve requirement is 20 percent of demand deposits. Since the bank has deposits of \$200,000, it must deposit part of its cash—\$40,000—with the Federal Reserve bank to meet this legal reserve requirement. Balance Sheet 2 shows its condition upon completion of this transaction.

BALANCE SHEET 2

<i>Assets</i>		<i>Liabilities and Capital Account</i>	
Cash	\$ 960,000	Demand deposits	\$ 200,000
Deposits with Federal Reserve bank	40,000		
Building and equipment	200,000	Capital stock	1,000,000
	<u>\$1,200,000</u>		<u>\$1,200,000</u>

BANK LOANS

Business firms in the community wish to take advantage of the lending facilities offered by the bank. They ask the bank to lend a total of \$1 million. In return for a deposit credit on the books of the bank, the borrowers offer the bank their own promissory notes. Since the bank's deposits have been increased from \$200,000 to \$1,200,000 as a result of the loans, its reserve requirements (20 percent of deposits) have increased from \$40,000 to \$240,000. The bank transfers \$200,000 in cash to its reserve account with the Reserve bank. After this transfer Balance Sheet 3 appears as follows:

BALANCE SHEET 3

<i>Assets</i>		<i>Liabilities and Capital Account</i>	
Cash	\$ 760,000	Demand deposits	
Deposits with Federal Reserve bank	240,000	Previous	\$ 200,000
Loans	1,000,000	New	1,000,000
Building and equipment	200,000	Capital stock	1,000,000
	<u>\$2,200,000</u>		<u>\$2,200,000</u>

BANK INVESTMENTS

It is important to observe that the bank has \$760,000 in cash which can be converted into reserve balances, if the need arises. The cash yields no earnings to the bank. Banks exist primarily for the purpose of making a profit for their owners; the more they successfully lend and invest, the greater will be their earnings. The bank, therefore, decides to convert part of its cash into earning assets. It purchases \$1 million of corporate bonds and pays for these bonds by crediting the deposit account of the seller of the bonds. In addition, the bank purchases \$1 million of a new issue of government bonds, crediting the government with a deposit account of \$1 million. The bank desires to make these arrangements since it has ample cash and will earn interest on the loans and investments it makes. The bank acquires earning assets—loans and investments—in return for its liabilities—deposits due to customers. After the bank transfers \$400,000 cash to its reserve account with the Reserve bank, Balance Sheet 4 portrays these transactions.

BALANCE SHEET 4

<i>Assets</i>		<i>Liabilities and Capital Account</i>	
Cash	\$ 360,000	Deposits	
Deposits with Federal Reserve bank	640,000	Previous	\$1,200,000
Loans	1,000,000	New	2,000,000
Corporate bonds	1,000,000		
Government bonds	1,000,000		
Building and equipment	200,000	Capital stock	1,000,000
	<u>\$4,200,000</u>		<u>\$4,200,000</u>

DEPOSIT WITHDRAWALS

Depositors draw checks against their accounts in order to make payments. Let us assume, however, that the recipients of these checks do not turn them over to the bank in exchange for cash—but instead use them either to open new deposit accounts or to increase old deposit accounts with the bank. Since we have assumed that there is only one bank in the country, payments by one depositor to another do not affect the bank's cash position at all. The bank's balance sheet will show no change in the total volume of deposits, although the ownership of the deposits will have changed hands. In such a situation the bank has no real need to hold the \$360,000 in cash on which it earns no interest. It will seek new borrowers and will make new investments.

PRIMARY AND DERIVATIVE DEPOSITS

Before continuing our discussion of bank operations, we must examine the significance of what has happened to the money supply. The first \$200,000 of bank deposits (Balance Sheet 2) arose because people deposited currency in the bank and received a deposit credit for \$200,000 on its books. In banking literature a deposit resulting from the lodgment of currency or its equivalent is called a *primary deposit*. The primary deposit resulted in an increase in both the bank's assets and its liabilities. In receiving such deposits the bank is essentially passive in determining the quantity of deposit money; the customer's decision to deposit the currency was the active factor in creating the primary deposit. Such action, however, results only in an exchange of currency money for deposit money, but leaves the community's money stock unchanged.

Demand deposits also appear on the books of the bank in Balance Sheets 3 and 4. These deposits, however, present a rather different

situation. The bank gave its debts—demand deposits—in exchange for the debts of others—promissory notes and bonds. Such deposits are called *derivative deposits*. In the case of derivative deposits the banking system by its lending and investing activities determines the quantity of money (demand deposits) which it will create on its books in favor of those to whom it has loaned or from whom it has purchased securities. When the banking system creates derivative deposits, the stock of money in the community is increased. A primary deposit does not alter the stock of money; it merely reduces the public's currency in return for demand deposits available to the public. A derivative deposit, however, does not reduce the public's holding of currency, but it does increase the community's ownership of demand deposits; hence, it results in an increase in the total stock of money. In its derivative deposit operations the banking system monetizes the debts of individuals, business concerns, or public bodies who give the banks their securities (either promissory notes or other evidences of debt such as bonds) in return for demand deposits (money).

In one sense the term deposit is misleading. The uninitiated take the common-sense view that a deposit arises on the books of the bank as a result of an individual bringing currency to the bank and receiving a credit with the bank for the amount of currency deposited with it. But deposits actually appear on the books of commercial banks as a result of both (1) primary deposits and (2) derivative deposits, and by far the larger volume of deposits are of the derivative type. The volume of bank deposits, and therefore the largest part of our money stock, is dependent proximately on the volume of loans and investments made by the banking system as a whole.

ULTIMATE LIMITS OF DEPOSIT CREATION

In our discussion we shall continue to assume:

1. That, the community on the whole makes no attempt to exchange deposit credits or checks into currency, that is, checks drawn by one depositor are paid into some other depositor's account.

2. That our bank itself has no need for cash except to meet its legal reserve requirements. The first assumption above implies that withdrawals and deposits of currency balance out perfectly. In actual practice banks do need certain amounts of currency in their tills in order to bridge a gap between deposits and withdrawals of currency by the public. Our assumption that the bank does not require to hold any currency is made merely to simplify the arithmetic involved—and will be modified after we complete our discussion of the fundamentals of bank deposit creation.

3. That there are always borrowers who would like to avail themselves of the bank's entire lending capacity.

4. That the bank desires to lend until it has no excess reserves.

In the light of these assumptions, the bank will not be content to hold \$360,000 in cash (Balance Sheet 4) on which it earns no income. It will make additional loans and investments. Assume it first lends a business \$360,000, thereby creating new deposits and increasing the stock of money. The bank transfers cash equal to 20 percent of its new deposit to the Reserve bank to meet its legal reserve requirement. Since the bank will still have 80 percent of \$360,000 left after the reserve transfer takes place, it will make additional loans and investments. Each time it lends or invests, it increases total deposits and the stock of money—and transfers cash equal to 20 percent of new deposits in order to maintain its required reserves.

What are the limits to the bank's power to "create" money in the form of demand deposits? The "limit" is reached when the bank has no more cash left to transfer to its reserve account. At this point the bank is said to be "loaned-up." It cannot make any more loans or investments because loans and investments increase deposits and more deposits will call for more reserves. The limit is reached, therefore, when the bank has transferred all of its remaining cash to its reserve account. How much new money is created before this point is reached? The answer to this question is fairly simple (particularly, under the assumptions which we have made). We have seen that each time the bank lends or invests \$5, it increases deposits by \$5 and has to transfer \$1 to reserves. Looked at the other way around, for each dollar the bank is able to transfer to reserves it can increase loans and investments and deposits by \$5 at most. Hence with the \$360,000 which it is holding in Balance Sheet 4 it can increase loans and investments by $5 \times \$360,000$ or \$1,800,000. If it lends more than this amount, it will not have the cash to satisfy its required reserves. Balance Sheet 5 will show the bank's condition upon completion of these transactions. We could have arrived at Balance Sheet 5 directly from Balance Sheet 2. In Balance Sheet 2 the bank had \$960,000 in cash after having received a primary deposit of \$200,000 and after having placed \$40,000 in reserve with the Federal Reserve bank. It could have made loans and investments totaling $5 \times \$960,000$ or \$4,800,000, thereby "creating" \$4,800,000 of new derivative deposits against which it could have transferred its entire \$960,000 in cash to its reserve account.

It should be readily apparent that the bank is completely "loaned-up" and cannot create any additional deposits until it acquires addi-

BALANCE SHEET 5

<i>Assets</i>		<i>Liabilities and Capital Account</i>	
Cash	\$	Deposits	
Deposits with Federal Reserve bank	1,000,000	Previous	\$3,200,000
Loans		New	1,800,000
Previous	1,000,000		
New	1,800,000		
Corporate bonds	1,000,000		
Government bonds	1,000,000		
Building and equipment	200,000	Capital stock	1,000,000
	<u>\$6,000,000</u>		<u>\$6,000,000</u>

tional cash. All its cash—\$1 million—has been converted into reserves and its deposits are \$5 million so that it is operating on its minimum legal reserve requirement of 20 percent (\$1 million in reserves against \$5 million deposits).

The ultimate limits to deposit expansion by our bank are therefore set by two factors—the total volume of its available cash reserves and the minimum ratio of *reserve to deposits* required by law. In other words, under a rule requiring a 20-percent reserve, the bank can expand loans and investments and deposits by \$5 for every \$1 it holds in reserves. It is only under the simplifying assumptions which we have made that a fivefold expansion of loans, investments and deposits will be reached. In practice the assumptions may not apply; in such cases deposit expansion does not always reach its potential limits. It is these factors to which we must now turn.

ACTUAL LIMITS TO DEPOSIT CREATION

Cash Drain The first assumption which we made in the previous section was that the bank borrowers as well as the people to whom they paid checks would always keep their receipts in the form of "bank money." Because of this assumption we decided that new loans and investments and ultimate uses of these loans and investments would not affect the bank's cash position—except, of course, for the transfer of funds required to maintain legal reserves. In practice the public's currency requirements tend to vary with economic conditions. Higher prices, higher payrolls, and increased economic activity usually cause an increase in the community's need for currency. If bank loans are expanding, it is probably incorrect to assume that the community's currency needs will be constant. A more reasonable assumption which can be made is that

some part of the deposits created by bank loans and investments will be withdrawn in cash in order to meet the public's increased needs for cash. Such withdrawals reduce the bank's cash position and therefore reduce the potential basis on which further deposit expansion can take place.

In Balance Sheet 5 we found that the bank's stock of cash of \$960,000 could be used to make loans and investments totaling \$4,800,000. These loans and investments gave rise to deposits totaling \$4,800,000 and to an increased reserve requirement of 20 percent of \$4,800,000 or \$960,000—which is, of course, the maximum amount of reserves the bank has at its command.

If we assume that for every \$100 of new deposits the public can be expected to withdraw \$10 in the form of currency, the deposit creating potential of the bank will not be as large as was assumed in the previous illustrations. The bank cannot lend and invest \$4,800,000 because it will not be able to meet both its reserve requirement of \$960,000 as well as the currency drain of \$480,000 (10 percent of \$4,800,000). Because cash drains are not precisely known in advance, the maximum amount the bank can lend is, in practice, determined by trial and error. Under our assumption of an expected constant 10-percent cash drain, the maximum the bank can lend and invest can be calculated; with a cash stock of \$960,000 the maximum amount of derivative deposits the bank can create is \$3,200,000. In this case the bank will just be able to set aside the \$640,000 required to maintain its legal reserves (20 percent of \$3,200,000) as well as to meet the public demand for \$320,000 of currency (10 percent of \$3,200,000). A cash drain of \$320,000 reduced the bank's reserves by a like amount. If there were no cash drain, the bank could have "created" \$4,800,000 of new derivative deposits. The deposit expansion potential of the bank was reduced by \$1,600,000 to \$3,200,000 as a result of the \$320,000 cash drain. Under a 20-percent reserve requirement, every \$1 of reserve lost prevents an increase in deposits of \$5.

In our illustration above, we assumed that cash was drained from the banking system into the hands of the citizens of the country; this situation is often referred to as an internal cash drain. As we saw in Chapter 3, when a nation is on the gold standard and buys more from abroad than it sells abroad, deposits tend to be withdrawn in gold to settle balances due to foreign countries. Gold exports are described as external cash drains and reduce the reserves of the banking system losing gold just as does an internal cash drain.

Vault Cash Our second assumption concerned the bank's vault cash—which we assumed would be zero. In practice the bank needs

to hold a certain amount of cash in its vaults to ensure that it is always able to satisfy its customers' demand for cash. Thus, in addition to the cash tied up in meeting the legal reserve requirement and the cash needed to meet an outflow of currency which can be expected to accompany a rise in demand deposits, the bank has to hold some cash in its vaults as a precautionary measure. The quantity of vault cash which the bank regards as "adequate" tends to vary with, among other things, total deposits outstanding. If we assume, for example, that the bank's managers operate on the principle of always having vault cash equal to at least $3\frac{1}{8}$ percent of outstanding deposits, the actual limit of deposit expansion is lower even than the \$3,200,000 arrived at above. The "new" limit is \$2,880,000 of deposits on the basis of an original stock of \$960,000 in cash. How do we arrive at this figure? With loans and investments of \$2,880,000 all of the \$960,000 in cash will be used as follows:

Reserves	20 percent of \$2,880,000	= \$576,000
Cash drain	10 percent of \$2,880,000	= 288,000
Vault cash	$3\frac{1}{8}$ percent of \$2,880,000	= 96,000
Total		<u>\$960,000</u>

If it made loans and investments in excess of \$2,880,000, our bank would be in difficulty. Either it would be unable to meet its legal reserve requirement, or the bank would not be able to meet its customers' demand for cash or its vault cash would be at a level lower than its management deems safe.

Unwillingness of Bank to Lend or of Customers to Borrow Cash drains to customers and holdings of vault cash have a similar effect in reducing the deposit creation potential of the bank. The unwillingness of the bank to lend or the unwillingness of customers to borrow are other factors affecting the deposit-creating limits of the bank. Thus far we have assumed that the demand for bank loans is such that the bank is able and willing to exercise its lending power to the limit. In practice, one or both of these conditions may not exist. In the situation above, the bank has \$960,000 in cash and can therefore lend up to \$2,880,000. If the community wishes to borrow only \$1,440,000 or if the bank can only find acceptable customers who want \$1,440,000, deposits expand only by this amount. In other words, the bank is able to utilize only \$480,000 of its potential cash reserves of \$960,000 as follows:

Reserves	20 percent of \$1,440,000	= \$288,000
Cash drain	10 percent of \$1,440,000	= 144,000
Vault cash	$3\frac{1}{8}$ percent of \$1,440,000	= 48,000
Total		<u>\$480,000</u>

The remaining \$480,000 of unutilized cash is only potentially capable of supporting a further expansion of loans and investments and of the resulting deposits. The unutilized cash may lie in the bank's vault or, more commonly, it is voluntarily deposited with the Federal Reserve bank. This potential but unused reserve is known as "excess reserves."

THE DESTRUCTION OF BANK DEPOSITS

Thus far we have considered only increases in bank deposits. In explaining the reduction in bank deposits most of the reasoning above also works—albeit, in reverse. Several factors may bring about a reduction in total deposits.

A borrower may repay the loan he received from the bank. If, as is typical, he writes a check (say, for \$100,000) against his deposit account with the bank and gives this check to the bank in payment of his debt, the bank's assets—promissory notes—decline by \$100,000 and the bank's liabilities, demand deposits, fall by a like amount. Unless the bank finds a new borrower, that portion of the stock of money consisting of demand deposits shrinks by \$100,000.

Another way in which demand deposits are reduced, thus shrinking the stock of money, could result from an unexpected cash drain. In one of our previous examples, the bank had \$960,000 in cash and made loans and investments of \$2,880,000. In that situation the cash was used as follows:

Reserves	20 percent of \$2,880,000	= \$576,000
Cash drain	10 percent of \$2,880,000	= 288,000
Vault cash	3½ percent of \$2,880,000	= 96,000
Total		<u>\$960,000</u>

Let us assume that one of the depositors decides to withdraw \$180,000 in cash and that the bank meets this demand by paying out \$50,000 of its vault cash and by drawing \$130,000 out of its reserve account—thus leaving only \$446,000 in its reserve account. The bank is now faced with inadequate reserves; deposits fell from \$2,880,000 to \$2,700,000 because of the deposit withdrawal which took place. Against the new amount of deposit liabilities, reserves of \$540,000 are required (20 percent of \$2,700,000). But the bank's reserve account only shows \$446,000; in addition the bank's vault cash is extremely low. The way in which the bank can meet its reserve deficiency is to reduce its deposit liabilities. If deposit liabilities are reduced to \$2,230,000, its reserves of \$446,000 are 20 percent of its deposits outstanding. The bank reduces its deposits by insist-

ing on repayment of loans which come due and refusing to make new loans and investments. Thus the original cash withdrawal of \$180,000 leads to a shrinkage of deposits (hence of the monetary stock) several times greater than the withdrawal itself.

Thus, whenever reserves are changed, there is a multiple change in the bank's ability to lend and hence a multiple change in the total of demand deposits in existence. A given increase in bank reserves can support an increase in deposits several times the size of the increase in reserves. A given decrease in bank reserves forces a decrease in deposits several times the size of the original decrease. Multiple expansion and contraction of deposits, as this process is called, is an important aspect of a banking system based on "percentage" or "fractional" legal reserve requirements. Whatever its advantages, we must not lose sight of the fact that multiple expansion and contraction of deposits in a fractional reserve banking system produces great instability in the size of the monetary stock. Such a banking system produces much wider variations in the stock of money than the variations in bank reserves.

■ BANKING SYSTEM WITH MANY INDIVIDUAL BANKS

We must now drop the simplified assumption that the banking system consists of only one bank and examine the creation and destruction of bank deposits in a banking system consisting of many banks.

DEPOSIT-CREATING POWER OF INDIVIDUAL BANK IN BANKING SYSTEM

As was pointed out earlier, banks are profit-seeking institutions; most of their earnings are derived from interest received on their loans and investments. The more earning assets (loans and investments) the bank holds, the greater are its interest receipts. It should be readily evident that banks are anxious to increase their loans and investments. What sets the limits on the amount of loans and investments the individual bank can make?

When a bank extends a loan or makes an investment, the customer typically does not withdraw the proceeds of the loan or investment in currency but instead receives a deposit credit with the bank, against which he can and usually does write checks. Since the bank grants deposit credits to its customers when it makes a loan or investment, can the bank continue indefinitely to make loans and

investments and extend deposit credits on its books to its customers? The answer is no! There are at least two limits to the deposit-creating powers of the individual bank.

LIMITS TO INDIVIDUAL BANK'S DEPOSIT-CREATING POWERS

The first and most obvious limit to the bank's deposit-creating power is, as we have seen, the legal requirement that it must hold reserves equal, at the minimum to a certain percentage of its deposit liabilities. (We have assumed the legal reserve requirement to be 20 percent of deposit liabilities, for purposes of illustration.) Therefore, the amount of reserves and the percentage of reserves which banks are legally required to maintain against deposit liabilities determine the maximum amount of deposits which the bank can have on its books. In Balance Sheet 5 we saw that our banking system was completely loaned-up. The reserve requirement was 20 percent; the total amount of reserves was \$1 million. Therefore, when total deposits were \$5 million, the banking system had utilized all its reserves and could not create any additional deposits.

The second and more immediate limit to the deposit-creating powers of the individual bank arises from the occurrence of adverse clearing balances. In order to explain this more immediate limitation to the individual bank's deposit-creating powers, we shall assume there are twenty banks in our banking system and that Balance Sheet 5 portrays the combined assets and liabilities of these banks.

BALANCE SHEET 5

(Banking system consisting of twenty banks)

<i>Assets</i>		<i>Liabilities and Capital Account</i>	
Cash	\$.	Deposits	\$5,000,000
Deposits with Federal Reserve bank	1,000,000		
Loans	2,800,000		
Corporate bonds	1,000,000		
Government bonds	1,000,000		
Building and equipment	200,000	Capital stock	1,000,000
	<u>\$6,000,000</u>		<u>\$6,000,000</u>

Moreover, we will assume that each bank does one twentieth of the total banking business in the country. Balance Sheet 6 portrays the condition of Bank 1 in our banking system.

BALANCE SHEET 6

Bank 1

<i>Assets</i>		<i>Liabilities and Capital Account</i>	
Cash	\$	Deposits	\$250,000
Deposits with Federal Reserve bank	50,000		
Loans	140,000		
Corporate bonds	50,000		
Government bonds	50,000		
Building and equipment	10,000	Capital stock	50,000
	<u>\$300,000</u>		<u>\$300,000</u>

With reserves of \$50,000, a legal reserve requirement of 20 percent and deposit liabilities of \$250,000, it should be clear that Bank 1 is completely loaned up and cannot create additional deposits.

DEPOSIT OF CASH IN INDIVIDUAL BANK

Now let us assume that an individual deposits \$100,000 of currency with Bank 1. The bank's cash increases by \$100,000 and its liabilities, deposits, go up by \$100,000. The bank then transfers all its newly acquired cash to the Reserve bank; its asset cash goes down by \$100,000 while its asset deposits with the Federal Reserve bank rises by \$100,000. Balance Sheet 7 portrays the books of Bank 1 after these transactions have been completed.

BALANCE SHEET 7

Bank 1

<i>Assets</i>		<i>Liabilities and Capital Account</i>	
Cash	\$	Deposits	\$350,000
Deposits with Federal Reserve bank	150,000		
Loans	140,000		
Corporate bonds	50,000		
Government bonds	50,000		
Building and equipment	10,000	Capital stock	50,000
	<u>\$400,000</u>		<u>\$400,000</u>

With a reserve requirement of 20 percent and deposits of \$350,000, the bank is required to maintain reserves of \$70,000; it has excess reserves of \$80,000 (reserves of \$150,000 minus \$70,000 of required

reserves). Since Bank 1 has excess reserves, it can increase its deposit liabilities by expanding its loans and investments. It is true that in a fractional reserve banking system the reserves of a commercial bank are always less than its deposit liabilities. Can Bank 1 lend five times its excess reserves? The answer again is No! *A single bank can expand its loans and investments by an amount roughly equal to its excess reserves and no more.*

The above statement appears to be paradoxical. On the one hand, deposits are always several times as large as reserves. On the other hand, we have said an individual bank cannot increase its loans and investments and hence its deposits by more than the amount of its excess reserves. It is easy to explain this paradox, and once learned the explanation should provide a clear understanding of the distinction between the deposit-creating power of an individual bank and the deposit-creating power of a banking system consisting of thousands of individual banks.

BANK LOAN

When a bank extends a loan to its customer, we have seen that it creates a deposit to his credit for the amount of the loan. Since the customer borrows from the bank and pays interest on the loan, he will not leave the deposit in the bank but will make full use of it by drawing checks on his account to meet the payments that led him to borrow. Ordinarily the depositor draws checks against his account in favor of an individual who has an account in another bank. Let us follow through on this transaction. An individual writes a check on his account in Bank 1 and pays an individual who has an account in Bank 2. The amount of the check is transferred from Bank 1 to Bank 2 through the Federal Reserve bank. The Reserve Bank debits (that is, reduces) the reserves of Bank 1 by the amount of the check and credits (that is, increases) the reserves of Bank 2 by a like amount.

If Bank 1 increases its loans by \$100,000 and creates deposits in a like amount, it is likely to lose reserves of the best part of \$100,000 to other banks in the system. The loss of reserves resulting from a loan or investment by Bank 1 establishes a more immediate limit to its lending power than the increase in its deposit liabilities. We can illustrate this problem by referring back to Balance Sheet 7 where Bank 1 had excess reserves of \$80,000. After Bank 1 extended \$100,000 of loans to its customers, its books would appear as shown in Balance Sheet 8. Bank 1 started with excess reserves; after granting its customers \$100,000 in loans by creating a deposit to their credit,

BALANCE SHEET 8

Bank 1

<i>Assets</i>		<i>Liabilities and Capital Account</i>	
Cash	\$. .	Deposits	\$450,000
Deposits with Federal Reserve bank	150,000		
Loans	240,000		
Corporate bonds	50,000		
Government bonds	50,000		
Building and equipment	10,000	Capital stock	50,000
	<u>\$500,000</u>		<u>\$500,000</u>

the bank shows an increase on its books of deposit liabilities of like amount. With a legal reserve requirement of 20 percent and deposit liabilities of \$450,000, the minimum reserve requirement is \$90,000; with \$150,000 of reserves, Bank 1 has excess reserves of \$60,000. Since the customers who borrowed the funds will have to meet their obligations to others, they draw checks on their accounts for \$100,000 which are then deposited by individuals in other banks. After the checks are cleared at the Reserve bank, Balance Sheet 9 portrays the condition of Bank 1.

BALANCE SHEET 9

Bank 1

<i>Assets</i>		<i>Liabilities and Capital Account</i>	
Cash	\$. . .	Deposits	\$350,000
Deposits with Federal Reserve bank	50,000		
Loans	240,000		
Corporate bonds	50,000		
Government bonds	50,000		
Building and equipment	10,000	Capital stock	50,000
	<u>\$400,000</u>		<u>\$400,000</u>

Note that deposits have fallen by \$100,000 as customers drew checks for that amount. As a result of the check clearing through the Reserve bank, reserves with the Federal Reserve bank have fallen by \$100,000. The minimum reserves required against deposits of \$350,000 would amount to \$70,000. Bank 1 has a reserve deficiency of \$20,000. This deficiency arose because Bank 1 granted loans

greater than the amount of its excess reserves. It should be clear that Bank 1 would not extend loans in the amount of \$100,000.

Going back to Balance Sheet 7 where Bank 1 had excess reserves of \$80,000, let us see what would happen if the bank granted loans equal in amount to its excess reserves. Bank 1 increases its loans by \$80,000 and creates deposits in a like amount. Its loans increase by \$80,000 as do its deposits. Balance Sheet 10 shows the bank's books after this transaction.

BALANCE SHEET 10

Bank 1

<i>Assets</i>		<i>Liabilities and Capital Account</i>	
Cash	\$. .	Deposits	\$430,000
Deposits with Federal Reserve bank	150,000		
Loans	220,000		
Corporate bonds	50,000		
Government bonds	50,000		
Building and equipment	10,000	Capital stock	50,000
	<u>\$480,000</u>		<u>\$480,000</u>

The customers who borrowed from the bank draw checks against their deposits in meeting payments to others. These checks are deposited in other banks and are in turn cleared through the Federal Reserve bank. Bank 1 loses \$80,000 in reserves and \$80,000 in deposit liabilities; its Balance Sheet, 11, appears as follows after the completion of these transactions.

BALANCE SHEET 11

Bank 1

<i>Assets</i>		<i>Liabilities and Capital Account</i>	
Cash	\$	Deposits	\$350,000
Deposits with Federal Reserve bank	70,000		
Loans	220,000		
Corporate bonds	50,000		
Government bonds	50,000		
Building and equipment	10,000	Capital stock	50,000
	<u>\$400,000</u>		<u>\$400,000</u>

Bank 1 now is completely loaned up. By lending an amount equal to its excess reserves, \$80,000, it has created the maximum amount

of deposits possible with the reserves it has and the legal reserve requirement of 20 percent of deposit liabilities.

CLEARING HOUSE DRAIN

It should be readily apparent that an individual bank in a banking system cannot lend an amount equal to some multiple of its excess reserves. It can typically lend an amount equal to its excess reserves. The basic explanation lies in the loss of reserves by the individual bank as its customers draw checks on their newly received deposits to meet payments to others who deposit these checks in other banks in the banking system. The other banks discover that they have more checks drawn on the first bank than it has checks drawn on them. Normally, checks are transferred through the Federal Reserve bank. The reserves of the bank on which the check is drawn are reduced, and the reserves of those banks who received the checks are increased. At the end of the day's business the first bank will have what is called an *adverse clearing balance or drain*. Its reserves will be decreased and the reserves of the other banks will increase.

EFFECTS ON OTHER BANKS IN THE SYSTEM

When a bank lends, it has to face the loss of its reserves. The student, however, must not lose sight of the fact that whatever Bank 1 loses in reserves is gained by other banks. In our illustrations, whose effects are shown in Balance Sheet 11, Bank 1 lost reserves of \$80,000. The reserves of other banks, however, increased by a like amount. We can illustrate this point in the following way. Assume depositors in Bank 1 make payments to depositors in Bank 2 by drawing \$80,000 of checks against their accounts with Bank 1. Bank 2 credits its depositors with \$80,000 and sends the checks on Bank 1 to the Federal Reserve bank; the Reserve bank reduces the reserve account of Bank 1 by \$80,000 and credits the reserves of Bank 2 by a like amount. The derivative deposits of Bank 1 become the primary deposits of Bank 2 and increase the reserves of Bank 2. Total deposits and total reserves for a banking system consisting of Banks 1 and 2 remain the same. It should be noted, however, that the reserves and deposits of Bank 1 have fallen by \$80,000 while deposits and reserves of Bank 2 have risen by \$80,000.

While the lending ability of Bank 1 is exhausted as shown in Balance Sheet 11, the lending ability of the banks which now have

larger reserves is increased. How does this work? Before it received additional reserves of \$80,000, the books of Bank 2 were the same as the books of Bank 1 in Balance Sheet 6.

Bank 2 has acquired a deposit of \$80,000 and additional reserves of \$80,000. Since it must keep a reserve of 20 percent against its new \$80,000 deposit, Bank 2 must use \$16,000 of its new reserves (20 percent of \$80,000 equals \$16,000). Thus, Bank 2 has excess reserves of \$64,000 as can be seen in Balance Sheet 12.

BALANCE SHEET 12

Bank 2

<i>Assets</i>		<i>Liabilities and Capital Account</i>	
Cash	\$..	Deposits	\$380,000
Deposits with Federal Reserve bank	180,000		
Loans	140,000		
Corporate bonds	50,000		
Government bonds	50,000		
Building and equipment	10,000	Capital stock	50,000
	<u>\$380,000</u>		<u>\$380,000</u>

Bank 2 increases its loans by \$64,000 in creating deposits for its customers, who in turn draw checks on their deposit accounts in making payments to their creditors. We can then repeat for Bank 3 what we have done for Banks 1 and 2. The picture we have tried to portray is that a bank can create additional deposits up to the amount of its excess reserves. When it does so, most of the excess is transferred to other banks which can then expand their loans and investments in creating deposits. However, even though the reserves of the other banks increase by the same amount as the reserves of the deposit-creating bank decline, the other banks are not able to expand their deposits by the full amount of the newly acquired reserves. The reason for this is that the deposits of the other banks increase and part of the reserves acquired by each bank must be set aside against the increased deposit liabilities incurred by that bank.¹

¹ In order to simplify the exposition, it has been assumed that the borrower withdraws the entire proceeds of the loan and that the individuals who receive the checks drawn by the borrowers deposit them in other banks. Therefore, the amount of derivative deposits that one bank can create on the basis of the excess reserves resulting from a primary deposit is limited to the amount of the excess reserves. In practice, this is not entirely true. The borrower himself retains on deposit part of the proceeds

EFFECT ON THE BANKING SYSTEM AS A WHOLE

While the individual bank can only expand its deposits by an amount equal to its excess reserves, for the banking system as a whole the effect of a net new deposit of say \$100,000 at Bank 1 does not end when that bank places \$20,000 of it in reserve and lends \$80,000, the amount of its excess reserves. This \$80,000 is spent by the recipients of the loan and in turn appears as \$80,000 more of deposits in some other bank or banks (which we shall call for convenience Second Round Banks). These banks in turn place 20 percent of that \$80,000, or \$16,000, in reserve accounts and lend out the remaining \$64,000. These loans in turn are spent, and some or all of them will ultimately become deposits in some other bank or banks. By how much can the banking system, as distinguished from a single bank, expand its loans and deposits, hence its deposits, with an increase of reserves of \$100,000? Where does the lending and deposit-creating process end?

For simplicity we shall trace the flow of these excess reserves through the banking system under the following assumptions. During this process (1) the public, that is to say, individuals, firms and governments, does not attempt to increase its holdings of currency and coin. In other words, everybody involved has a checking account into which he will pay all his new receipts of money. (2) Banks themselves do not attempt to increase or decrease their holdings of till money. (3) The public is willing to borrow as much as banks are able and willing to lend—in this case 80 percent of all new reserves they receive. (4) Banks do not hold excess reserves but are willing and able to lend up to the full amount of the reserves they possess.

Under these assumptions we can arrive at the final answer as to what the increases in total deposits in the banking system will be, given an increase in reserves of \$100,000. The process of deposit creation will come to an end only when no bank anywhere in the system has excess reserves as is shown by means of an arithmetic table or an algebraic equation, both of which are shown in Table 14. The result is shown graphically in Figure 7.

of the loan, and some of the checks he draws are deposited by the recipients in the same bank. Hence, the adverse clearing balance or loss of cash to other banks shown by the borrower's own bank is less than the amount of the loan, and that bank's lending ability (and creation of derivative deposits) is correspondingly increased. The primary deposits and resulting excess reserves received by the second bank in the system are reduced accordingly. Therefore, the aggregate expansion of derivative deposits by the second bank is less, although, as in the case of the first bank, its lending ability per dollar of excess reserves arising from its primary deposits is also increased.

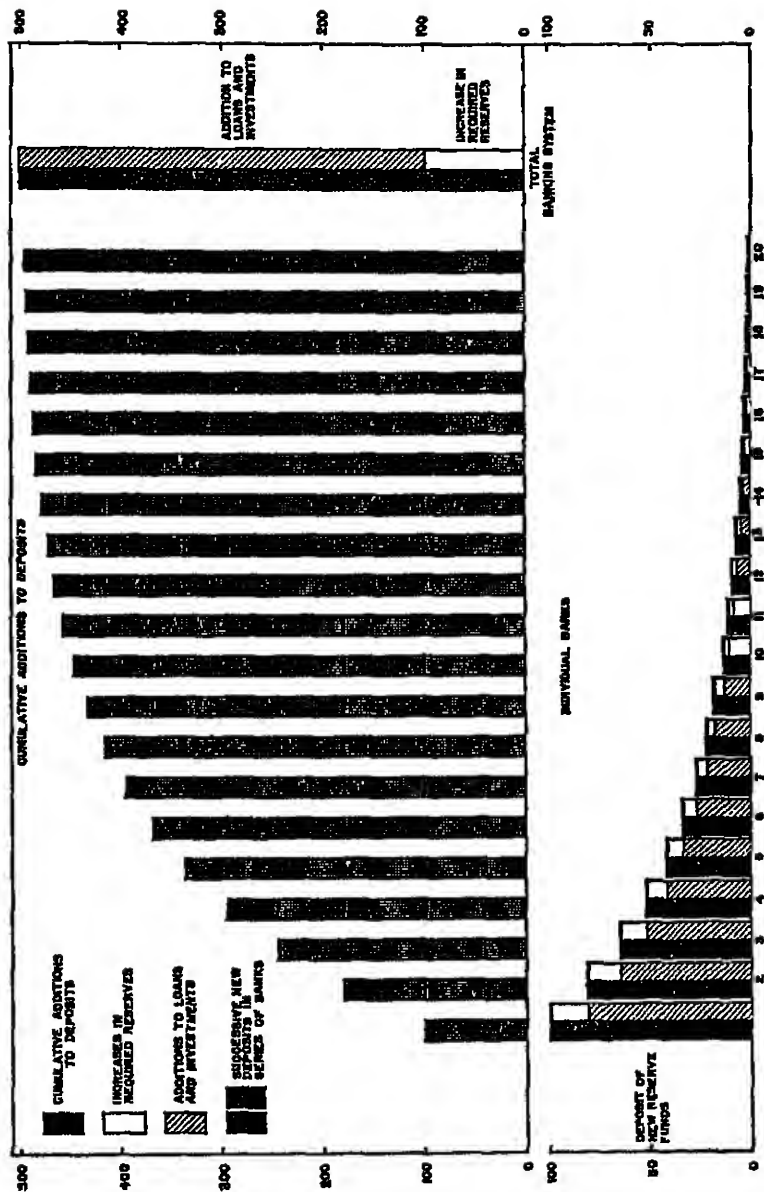


FIGURE 7 PROCESS OF DEPOSIT EXPANSION

NOTE. Illustrative example on basis of \$100,000 of new deposits and reserve requirements of 20 percent.

TABLE 14
MULTIPLE EXPANSION OF BANK DEPOSITS
THROUGH THE BANKING SYSTEM

	1 Receives as new deposits	2 Keeps as reserves against new deposits	3 Makes additional loans or investments
First bank	\$100,000	\$ 20,000	\$ 80,000
Second Round Bank	80,000	16,000	64,000
Third Round Bank	64,000	12,800	51,200
Fourth Round Bank	51,200	10,240	40,960
Fifth Round Bank	40,960	8,192	32,768
Sixth Round Bank	32,768	6,554	26,214
Seventh Round Bank	26,214	5,242	20,972
Eighth Round Bank	20,972	4,195	16,777
Ninth Round Bank	16,777	3,355	13,422
Tenth Round Bank	13,422	2,685	10,737
Total first ten banks	\$446,313	\$ 89,263	\$357,050
Other banks in turn	53,687	10,737	42,950
Total for banking system	\$500,000	\$100,000	\$400,000

SOURCE: This table is adapted from one in Board of Governors of the Federal Reserve System, *The Federal Reserve System—Its Purposes and Functions*, 2d ed. (1947), p. 18.

Algebraically Column 1 = $\$100,000 + \$100,000 (\frac{1}{5}) + \$100,000 (\frac{1}{5})^2 + \$100,000 (\frac{1}{5})^3 \dots + \$100,000 (\frac{1}{5})^n$

Column 1 is the sum of a geometric progression $a + ar^2 \dots + ar^n$ or $a \left(\frac{1}{1-r} \right)$ where $n = \infty$. In our problem $r = \frac{1}{5}$ or 20 percent and $a = \$100,000$. By substituting these values in the formula, we find the sum equals $\$100,000 \left(\frac{1}{1-\frac{1}{5}} \right)$ or $\$100,000 \times 5$ or $\$500,000$.

The process of deposit expansion comes to an end when no bank has any excess reserves to lend after it has put aside the required reserve against deposits. In other words, when the whole of the original deposit of $\$100,000$ has come to rest as some bank's reserve, deposit expansion ends. But by the time this point is reached, that is, when new reserves are equal to $\$100,000$, new deposits are five times

\$100,000 or \$500,000. Although no individual bank lends more than its excess reserves, that is, four fifths of the deposits it receives, the banking system as a whole has "created" a fivefold increase in the stock of money. The key to this "paradox" lies, of course, in the assumptions we have made that all expenditures appear as deposits, that 80 percent of all new deposits are reloaned, and that all loans end up as expenditures. Under these assumptions the total volume of new deposits is equal to the total volume of new loans which in turn is equal to v times the original new deposits, where

$$v = \frac{1}{\text{the required reserve ratio}}.$$

Another way of looking at the same expansion is to think of the original deposit of \$100,000 flowing into the banking system and being immobilized as a "reserve" with the Federal Reserve banks. Each time a new loan is created it is equal to four times the size of the new reserve until finally all the \$100,000 becomes a reserve and a total of \$400,000 is loaned out. This gives us a new total of demand deposits equal to \$100,000, the original deposit, plus \$400,000 "created" deposits or \$500,000 in all. From this illustration we can establish a formula for determining the limit of deposit expansion under our simple assumptions. Increase of deposits for the whole banking system = $\frac{\text{increase in deposits in the first bank}}{\text{required reserve ratio}}$, or in sym-

bols $\Delta D = \frac{\Delta A}{R}.$

ACTUAL AND POTENTIAL EXPANSION OF BANK DEPOSITS

In actual practice, however, none of the simple assumptions need be fulfilled. Part of the expenditures may not become deposits in a bank but may become currency and coin which people in business may wish to hold. For example, of the loan of \$80,000 made by the first bank, \$10,000 may be withdrawn in currency and only \$70,000 returned to the banking system as new deposits. Thus, the Second Round Banks, as we have called them, can lend not \$64,000 ($\frac{4}{5}$ of \$80,000) but \$56,000 ($\frac{4}{5}$ of \$70,000). If this process continues and individuals and businesses wish to withdraw part of their deposits in currency and coin instead of drawing a check against their deposits, then the final expansion will not be five times the original \$100,000, but less.

Secondly, banks themselves may not wish to lend out the total four fifths of the new deposits they receive; for instance, they may desire to increase their own stocks of till money. The existence of this factor will again make the expansion factor less than five.

Both these factors can be incorporated into our equation quite simply as follows: $\Delta D = \frac{\Delta A}{R \text{ plus } C}$ where C (expressed as a percentage of the increase in deposits) is the drain of money from the banking system into increases of cash held by individuals or firms in this country or abroad (internal or external cash drains) or by banks themselves.

Thus, given a cash drain of 10 percent, that is, $\frac{1}{10}$ of all new deposits are turned into currency and held either by individuals or by banks, the total expansion will be, not $\frac{\Delta A}{R}$ or $\frac{\$100,000}{\frac{1}{10}}$ or \$500,000, as in the previous example, but

$$\frac{\Delta A}{R + C} = \frac{\$100,000}{20\% + 10\%} = \frac{\$100,000}{30\%} = \$333,333.$$

It is easy to see why this should be so if we think of the cash drain as being tantamount to a larger reserve requirement. Indeed, it has exactly the same effect so far as deposit expansion is concerned. Thus, a cash drain of 10 percent plus an actual reserve requirement of 20 percent would have exactly the same effect as a required reserve of 30 percent.

More important, sometimes, than either of the two assumptions which we have just listed are the third and fourth assumptions we originally made: that the public is *willing* to borrow and the banks are *willing* to lend *all* the banks are *able* to lend. In time of serious depression some of the public is just not willing to borrow even at the lowest possible rate of interest, and some of the banks are not willing to lend. If such a state of affairs exists, obviously banks do not lend all four fifths of the new deposits they receive. They are forced to keep a portion of them idle because they are waiting for someone to borrow from them or they do not find borrowers who are acceptable credit risks. The effect of the existence of such idle money, or idle reserves as they are called, on our expansion process is to reduce the total expansion even more. Thus, the potential limit to expansion is, as we have seen, $\frac{\Delta A}{R + C}$, but the actual expansion may be much less. Since the existence of funds which cannot be lent has mathematically the same result as a higher reserve ratio, we can incorporate this variable into our equation also. We get actual expansion $\frac{\Delta A}{R + C + Q}$, where Q is a measure of idle lending capacity expressed as a percentage of new deposits.

We now have a complete explanation of what determines the

total volume of bank deposits except that we have not as yet explained the factor which determines ΔA . If ΔA is to be a new deposit, an original deposit which does not come from any other bank which we have been speaking about, it must come from one or a combination of four factors, which will be explained in detail in Part III of this book, as follows:

1. An inflow of gold.
2. An increase in Treasury currency, for example, a new printing of silver certificates.
3. Credit extended by the Federal Reserve System to member banks.
4. An inflow into the banking system in the form of deposits of currency previously held by individuals, businesses, or government.

Given a certain magnitude of ΔA , whether positive or negative, the total resultant change in the volume of deposit money we obtain from the equation above is $\Delta D = \frac{\Delta A}{R + C + Q}$. In good times, $\frac{1}{R + C + Q}$ may be as high as 5 or 6. In bad times both C and Q get larger, thus causing $\frac{1}{R + C + Q}$ to be much lower than this figure and perhaps as low as 1.

DEPOSIT DESTRUCTION

The process by which a reduction in deposits in one bank affects the other banks in the banking system entails the reverse of the steps by which the creation of deposits in one bank is ultimately spread to other banks. In order to examine briefly the transactions involved, we shall assume, as before, that our banking system consists of twenty banks, each of which does one twentieth of the banking business and that all the banks are completely loaned up. The consolidated balance sheet of all the banks was shown in Balance Sheet 5 and the balance sheet of an individual bank in Balance Sheet 6.

Individual Bank in a Multi-Unit Banking System We shall start the deposit-destruction process by having a depositor withdraw \$10,000 of deposits in currency from Bank 1. In order to meet this withdrawal the bank withdraws \$10,000 of reserves with the Federal Reserve bank in the form of Federal Reserve notes. The deposits of Bank 1 decline by \$10,000 to \$240,000, and the reserves of the

bank decline by \$10,000 to \$40,000. With deposits of \$240,000 Bank 1 is required to maintain minimum reserves of \$48,000 (20 percent of \$240,000), but it only has \$40,000 in reserves. Bank 1 has a reserve deficiency. To eliminate this deficiency we shall assume it calls some loans or allows some loans to run off. (The bank can sell some of its investments with the same effects as shown below.)

In order to pay off \$8,000 of loans that are called or mature, borrowers from Bank 1 sell \$8,000 of goods and receive in payment checks drawn on Bank 2 by depositors in the latter bank. Bank 1 will find its reserves increased by \$8,000, and its reserves are now the legal minimum of \$48,000 (20 percent of \$240,000).

Effect on Other Banks The effects of the initial cash drain on Bank 1 do not stop when Bank 1 acquires sufficient reserves to meet the minimum legal requirements. The deposits of Bank 2, which was also completely loaned up, were reduced by \$8,000, bringing its total deposits to \$242,000; its reserves were reduced by \$8,000 to \$42,000. With deposits of \$242,000 its minimum legal reserve requirement is \$48,400 (20 percent of \$242,000). Thus, Bank 2 has a reserve deficiency of \$6,400 and calls or allows this amount of loans to mature. Borrowers from Bank 2 who have to repay their loans exchange \$6,400 of goods for checks drawn on Bank 3 by depositors in the latter institution. Bank 2 increases its reserves by \$6,400, and its reserves now reach the legal minimum of 20 percent of \$242,000 of deposits. This process continues with banks 3, 4, etc., until the banking system has a volume of deposits appropriate for its volume of reserves.

Effect on the Banking System as a Whole By the time the process of deposit reduction has filtered down through n banks, the consolidated balance sheet of all the banks in the banking system appears as follows:

BALANCE SHEET 13

(Banking system consisting of twenty banks)

<i>Assets</i>		<i>Liabilities and Capital Account</i>	
Cash	\$..	Deposits	\$4,950,000
Deposits with Federal Reserve bank	990,000		
Loans	2,760,000		
Corporate bonds	1,000,000		
Government bonds	1,000,000		
Building and equipment	200,000	Capital stock	1,000,000
	<u>\$5,950,000</u>		<u>\$5,950,000</u>

While each individual bank was forced to reduce its loans by an amount equal to its legal reserve deficiency, for the banking system as a whole the reduction in deposits was five times the original loss in deposits because of the cash drain. By comparing Balance Sheets 5 and 13 we can observe the multiple contraction in deposits (\$50,000) for the banking system as a whole even though the original reduction in deposits in Bank 1 was only \$10,000.

QUESTIONS AND PROBLEMS

1. A recent text states: "The expansion of bank credit is a unique function of the commercial banking system, is inseparably connected with bank earning assets, and influences the volume of deposits and the distribution of the legal reserves." (F. W. Mueller, Jr., *Money and Banking: Organization and Functions*, New York, 1951, p. 439.) Explain each of these four statements.
2. "The expansion of bank loans and investments, on the one hand, and of bank deposits, on the other, move together. From the standpoint of the individual bank, loans and investments appear to grow out of deposits. As a bank's deposits increase, it can expand its loans and investments. From the standpoint of the country as a whole, however, the causation runs chiefly the other way. Bank deposits expand primarily because loans and investments expand."
 - a. Explain, indicating the roles played by primary and by derivative deposits.
 - b. Of what do true primary deposits for the banking system consist?
3. a. In their expositions of banking processes American texts of a generation ago assumed that a commercial bank receiving a deposit of cash could expand its loans (and hence also its deposits) by an amount equal to some ten times the excess reserves so acquired. What are the main objections to such an exposition?
 - b. What limits exist to the multiple expansion for the banking system as a whole?
4. a. Explain why, for the banking system as a whole, multiple expansion of credit is possible, whereas the individual bank can expand its loans and investments by but little more than the primary deposit it receives.
 - b. Does the fact that the excess reserves of a given banking system furnish the basis for a multiple expansion of loans and deposits necessarily mean that such an expansion will occur? Explain.
5. "The factors which force contraction of bank credit are those which limit its expansion, when they are applied to an increased degree."
 - a. Illustrate, assuming that under changed conditions the public increases its cash holdings, the banks increase vault cash, and are less willing to lend and invest and that business men repay loans instead of continuing to borrow.

6. a. How can the expansion of commercial loans to business lead to capital formation when there is less than full employment? Full employment?
- b. How did the purchases of United States Government obligations by commercial banks during World War II affect the money supply? The level of output? Consumption?
- c. How does the expansion of bank credit assist business to adjust to changing conditions?
7. Some writers object to the statement that a bank "creates" or "manufactures" credit. They prefer to state that a bank "monetizes" credit. Explain by reference to the banking process.
8. a. A single bank in a banking system has excess reserves of \$100. It is required to maintain a legal reserve ratio of 20 percent. The bank's experience shows that 20 percent of a new loan will remain in the borrower's deposit account and that 10 percent of the checks he draws will be given to those who keep their deposit accounts with this bank. Show why, under these conditions, the maximum amount by which it can expand its loans is limited to approximately \$128.
- b. By what amount will the reserves of the other banks be increased? If the other banks in turn expand their loans on the basis of the increases in reserves, which resulted from the initial expansion by the single bank, by what amount may loans be expanded for the system as a whole (including the bank that initiated the expansion)?

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Bank Operations:

SOURCES OF FUNDS

■ THE BANK STATEMENT

BANKS are required by law to report their condition, in a prescribed form, to their supervisor on his call several times a year. National banks must report three times a year or oftener to the Comptroller of the Currency. State banks report to their superintendent or commissioner, and if they are members of the Federal Reserve System, they also report to the Federal Reserve authorities. If state banks are nonmembers but are insured with the Federal Deposit Insurance Corporation, they must also report to the latter. Table 15 shows in condensed form the combined balance sheets of the total operating insured commercial banks in the United States and its possessions on December 31, 1951; this table and Figure 8 present a bird's-eye view of the condition of the commercial banking system on that date.

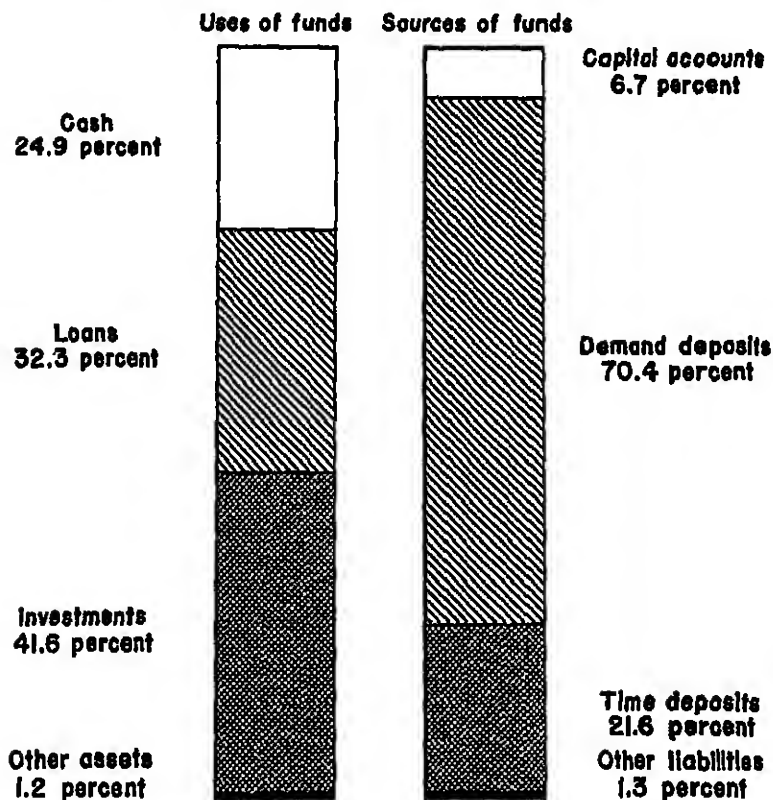
A writer once described a bank as a dealer in debts. It is a bookkeeping institution that shifts claims among individuals and business firms. *Its assets consist of debts of others while its deposits are liabilities* that are used by individuals and business enterprises to pay their debts. One of the best ways a beginning student can acquire a knowledge of a bank's operations is to analyze the results of the bookkeeping activities entailed in the statement of the bank's assets, liabilities, and capital accounts.

In studying this and the succeeding chapter, the student should

undertake to trace the effects of various operations upon the bank's balance sheet. In doing so, bear in mind that an increase in one asset item involves either a decrease of equal size in another asset item or an increase of equal amount in a liability or net worth item.

FIGURE 8

MAJOR CLASSES OF ASSETS, LIABILITIES, AND CAPITAL ACCOUNTS
OF INSURED COMMERCIAL BANKS, DECEMBER 31, 1951



Source: Federal Deposit Insurance Corporation.

or else a change in several items, the combined effects of which equal the initial change in the asset item.

The balance sheet depicts the ways in which the bank obtains and uses funds. Tables 16-23, included in this chapter and the next one, give a detailed breakdown for each of the principal items in the balance sheet. Sources of funds are found in Table 16 covering the Capital Accounts and Table 18 covering Deposits. Uses of funds

TABLE 15

CONDITION OF THE OPERATING INSURED COMMERCIAL BANKS IN
THE UNITED STATES AND POSSESSIONS, DECEMBER 31, 1951

	Millions of dollars	Percent of total
Cash assets	\$ 44,242	24.9
Earning assets (loans and investments)	131,044	73.9
U. S. Government obligations	60,599	34.2
Other securities	13,074	7.4
Loans and discounts	57,371	32.3
Other assets	2,164	1.2
Total assets	<u>\$177,449</u>	<u>100.0</u>
Deposits—total	\$163,172	92.0
General public	134,915	76.0
Government	13,447	7.6
Interbank	14,810	8.4
Borrowings	38	.0
Other liabilities	\$ 2,316	1.3
Total liabilities	<u>\$165,526</u>	<u>93.3</u>
Capital accounts	\$ 11,923	6.7
Total liabilities and capital	<u>\$177,449</u>	<u>100.0</u>

SOURCE: Federal Deposit Insurance Corporation.

are found in Table 21, Cash Assets; Table 22, Investments; and Table 23, Loans. If these tables were substituted for Table 15, the result would be a detailed statement of the commercial banks.

As seen from Figures 8 and 10, the banks obtain funds far more largely from creditors than stockholders, in 1951 depositors supplied \$14 for every \$1 supplied by stockholders. The banks employ these funds in the following principal ways. They make loans and invest in securities; in addition to these earning assets, the banks hold cash either in their vault or as balances with Federal Reserve or other banks.

TABLE 16

CAPITAL ACCOUNTS OF INSURED COMMERCIAL BANKS,
DECEMBER 31, 1951

	Millions of dollars	Percent of total
Capital notes and debentures	\$ 18	.1
Preferred stock	51	.4
Common stock	3,631	30.5
Surplus	5,504	46.2
Undivided profits	2,259	18.9
Reserves	461	3.9
Total	\$11,923	100.0

SOURCE: Federal Deposit Insurance Corporation.

■ CAPITAL ACCOUNTS

The excess of what banks own (their assets) over what they owe (their liabilities) is their net worth and appears in the capital accounts. When a bank's net worth becomes less than the par value of its outstanding shares, its capital is impaired. To avoid later losses to its creditors, the supervisory authority will require that the bank make up its capital impairment by assessing its stockholders. When the value of the assets falls below the amount of its liabilities, the bank is insolvent. The bank may be closed to protect the interests of the depositors, and it is said to have failed.

The function of bank capital is primarily that of a guarantee fund; it serves as a cushion of safety for creditors to fall back on. By averting insolvency for the individual bank and for the banking system the capital accounts seek to prevent wholesale closings of our banks and the depressions associated with bank closures. By preventing insolvency of the banks the capital accounts contribute to the general acceptability of demand deposits at fixed prices, thereby qualifying bank debt as money.

The net worth of a bank is the sum of the capital accounts. As shown in Table 16, the major elements of net worth of the insured commercial banks consist of capital stock, surplus, undivided profits, and reserves. The capital stock account records the amount paid in by stockholders when the bank is organized, or when additional shares are sold to stockholders (new and old), or when sums are transferred from surplus. Over 100 years of epidemics of bank

failures have convinced both federal and state governments of the necessity of establishing at least minimum requirements for stockholders' investments in banks. While there are a few notable exceptions, the minimum capital requirements in the states are much less stringent than those laid down by the federal government. The minimum par value of capital stock outstanding necessary before a national bank can begin operations is graded according to the population of the head-office city and according to the number of branch offices. The minimum capital stock for a bank located in a city of 6,000 or less is \$50,000; national banks in cities of from 6,000 to 50,000 are required to have a minimum capital of \$100,000; in centers with larger populations the requirement is \$200,000 unless state law permits organization in outlying districts of state banks with a capital of \$100,000 or less, in which case the minimum figure is \$100,000. For branch banks the common rule is that minimum paid-in capital requirements increase with the addition of each branch as though the branch were a separate corporation. The capital must be entirely subscribed and half paid in, *in cash*, before the bank is allowed to open its doors; the balance due must be paid in not more than five equal monthly installments.

Bank stock must have a par value; up to 1927, when a lower par value was permitted, all national bank stock had a par value of \$100 per share. Until 1933, moreover, national banks could issue only one class of stock. The Emergency Banking Act of 1933 permitted national banks to issue voting preferred stock of one or more classes to qualify themselves for federal deposit insurance. Some state banks were permitted by their state laws to issue preferred shares also; because some state banks were not legally permitted to issue preferred stock, they were encouraged to issue capital notes and debentures which were subordinate to deposits, to improve their capital structure, and thereby qualify for deposit insurance. The preferred shares, capital notes, and debentures of insured banks were sold largely to the Reconstruction Finance Corporation, which in 1935 held about \$1 billion of these issues. Banks used their peak wartime earnings to retire these issues, and the amount outstanding at the end of 1951 was inconsequential, as can be seen in Table 16.

Formerly, all national bank shares carried double liability in order to protect depositors and other creditors of the bank. This meant that the owner of a share of stock could be assessed an amount equal to the par value of his stock to meet the claims of the bank's creditors. Thus, the shareholder could lose not only the amount of his original investment in the stock, but also the amount of the assessment. The requirement proved uncollectible in practice. By

discouraging people from buying bank stock the double liability requirement interfered with raising capital in periods of depression, and it was abandoned for national banks during the 1930's.

Surplus represents an amount, other than the par value of ownership instruments, permanently committed by owners to the bank. Some of it is paid-in surplus which arose through the original sale of ownership securities at more than their par value. Thus, if a bank sells a share of its stock of \$100 par value for \$125, a paid-in surplus of \$25 is created. The practice of selling shares at a premium has been common and is done to absorb the organization expense and initial operating losses; at the time of organization national banks are required to have a paid-in surplus equal to 20 percent of their capital before commencing operations. Surplus may also arise through the downward revaluation (reduction of par value) of capital stock. Earned surplus, on the other hand, represents earnings which the directors have voted to add to the capital accounts rather than pay them out in dividends. Before declaring dividends on the common stock, national banks are required to carry to surplus 10 percent of the net earnings of the preceding half year until the surplus equals the par value of the capital stock. *Undivided profits* are earnings not yet allocated either to permanent surplus or to dividends; they are increased as income is earned and decreased as expenses are paid, losses incurred, dividends declared, and surplus increased. It is common practice to earmark or set aside a part of undivided profits or surplus as a *reserve for contingencies*. These reserves are set aside in anticipation of a possible decline in the values of assets below the net figures at which they are currently carried on the balance sheets; this practice permits the bank to absorb losses without disturbing the other capital accounts. Reserves for contingencies increased greatly in the early 1930's in response to the unsettled conditions then prevailing, but they have since declined.

In any business net worth is the result of the original owners' investment and the earnings retained by the business. As is shown in Table 17, most of the increases in the amount of bank capital in recent years must be attributed to the retention of earnings. At the end of 1951 capital stock made up 81 percent of all insured commercial banks' capital accounts, compared with 53 percent in 1934, 45 percent in 1939, and 35 percent at the end of 1945. Banks, under pressure from regulatory agencies to increase their capital and finding it difficult to market new shares of common stock, have adopted conservative dividend policies in order to add to their capital accounts. The major components of banks' capital accounts con-

TABLE 17

COMPONENTS OF CAPITAL ACCOUNTS OF INSURED COMMERCIAL
BANKS ON SELECTED DATES

(Percentage distribution)

Type of capital account	Date			
	Dec. 31, 1934	Dec. 30, 1939	Dec. 31, 1945	Dec. 30, 1951
Common stock, preferred stock, capital notes and debentures	53%	45%	35%	31%
Surplus	31	37	44	46
Undivided profits	9	12	15	19
Reserves	7	6	6	4
Total	100%	100%	100%	100%

SOURCE: Federal Deposit Insurance Corporation.

sist of surplus, undivided profits, and reserves. The proportion of total capital accounted for by these three items rose from 47 percent in 1934 to 69 percent at the end of 1951.

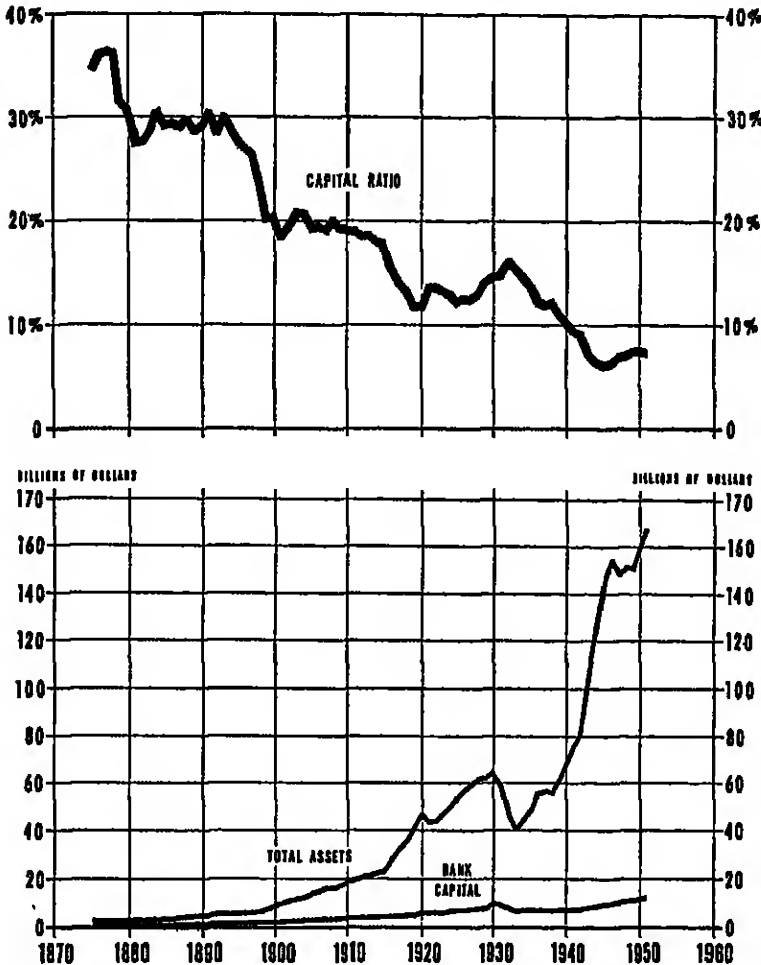
The solvency of the bank depends upon the size of the capital accounts as well as the stability of the value of its assets. If banks held only currency, a fixed-price asset, there would be little or no need for capital accounts to serve as a guarantee fund since the assets could always be sold at the fixed price at which they were acquired. But it should be clear (Table 15) that banks own assets of varying degrees of liquidity (quality of being convertible into cash at a fixed price). The larger the volume of noncash assets the banks own, the larger the net worth bank creditors desire. If net worth is 50 percent of assets, the bank's assets can be written down at least 50 percent before the bank is insolvent; at the other extreme, if bank capital is only 1 percent of total assets, a 2-percent write down in the value of the assets will make the bank insolvent. The bank owners (stockholders) prefer a small ratio of net worth to total assets. If a bank earns 5 percent net on its assets and obtains all its funds from stockholders, the shareholder earns 5 percent on his investment. On the other hand, if 50 percent of the funds come from depositors who do not receive interest on their deposits, and 50 percent from stockholders, the shareholder will earn 7.5 percent on his investment.

Despite the importance of the capital accounts in maintaining the

solvency of the banks and thus protecting the moneyness of bank deposits, federal regulation of bank capital requirements is not very extensive. The ratio of total capital accounts to total assets of the

FIGURE 9

BANK CAPITAL RATIO OF ALL COMMERCIAL BANKS, 1875-1951



SOURCE: Division of Research and Statistics, Federal Deposit Insurance Corporation.

nation's banks has shown a marked downward trend for at least three quarters of a century as is shown in Figure 9. The capital ratio was around 35 percent in 1875; by 1940 it had fallen to 10 percent. During World War II the capital ratio decreased rapidly as the

CLASSES OF DEPOSITS

Our major concern is with *general* deposits, where the thing deposited becomes the property of the bank and the depositor merely becomes a general creditor. Banks, however, also receive *special* deposits, as bailee, not owner, in which case they must return the identical article deposited, such as jewelry or securities. In practice, banks receive special deposits infrequently and instead prefer to rent boxes in safe deposit vaults in which customers' valuables can be stored. As was seen in Chapter 6, general deposits originate either as *derivative* deposits, which come into being when the bank makes a loan or an investment, or as *primary* deposits, which arise when hand-to-hand money, or claims to hand-to-hand money as checks on other banks or coupons for bond interest, etc., are turned over to the bank.

Table 18 classifies deposits of the insured commercial banks in

TABLE 18
DEPOSITS OF INSURED COMMERCIAL BANKS,
DECEMBER 31, 1951

	Millions of dollars			Percent of total
	Demand	Time	Total	
General public	\$ 98,858	\$36,057	\$134,915	82.7
Individuals, partnerships, and corporations	95,701	36,057	131,758	80.7
Certified and officers' checks, cash letters of credit and traveler's checks, etc.	3,157		3,157	1.9
Government	11,666	1,780	13,447	8.2
United States	3,352	262	3,614	2.2
States and political subdivi- sions	8,314	1,518	9,832	6.0
Interbank and postal savings	14,356	454	14,810	9.1
Domestic banks	12,975	27	13,002	8.0
Foreign banks	1,381	400	1,781	1.1
Postal savings		27	27	
Total	\$124,880	\$38,292	\$163,172	100.0
Percent of total	76.5	23.5	100.0	

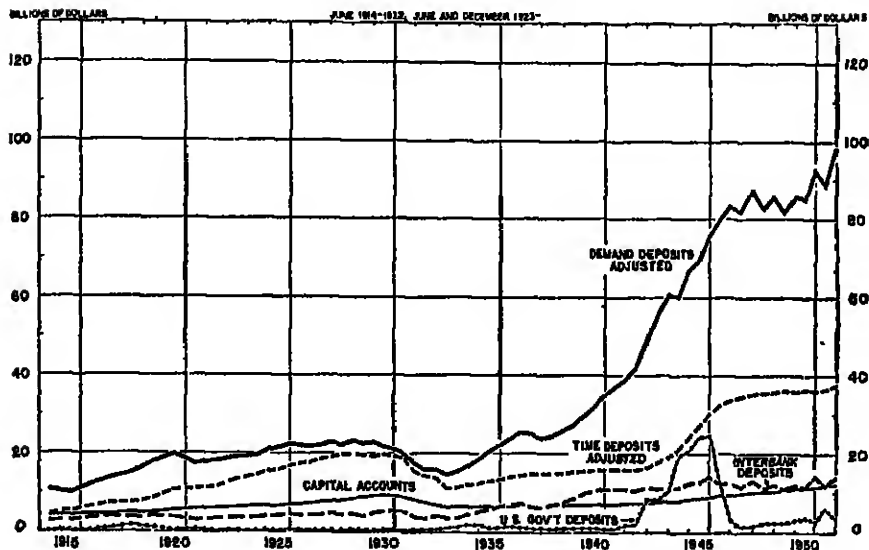
SOURCE: Federal Deposit Insurance Corporation.

two meaningful ways: (1) by the type of depositor and (2) by the nature of the contract between the bank and its creditors. Classified by ownership, we distinguish deposits held by the general public from those held by governmental bodies or those held by banks. Deposits of the general public include those held by individuals (including trustees), partnerships, and corporations. Deposits of governmental units are generally secured by pledging specific assets, notably United States Government bonds, as a guaranty that the deposit accounts are safe. Interbank accounts are owed largely by commercial banks to commercial banks, although a part of these deposits are owed to mutual savings banks and another part to foreign banks.

Classifying deposits by the type of debt contract between the banker and his creditor (the depositor), we can distinguish between *demand* deposits and *time* deposits. Less than one fourth of all deposits and more than one fourth of the general public's deposits, consist of time deposits. Time deposits are those which the depositor is not formally entitled to withdraw before giving the bank 30 days' notice, although in practice the bank waives its right to notice and honors withdrawals on demand. While some time deposits represent idle balances of business concerns, for the most part time deposits are largely *savings* deposits accumulated for a specific purpose, as the purchase of a house or the acquisition of some other costly durable asset, or to maintain a fund which can be drawn upon in the event of some emergency. In a sense, savings deposits represent investment "by proxy" of the depositor's surplus funds and payment of interest to him on the deposit with the bank. Time deposits may be evidenced by time certificates of deposit—instruments issued by the bank which serve as both receipts and promises to pay which state the terms of the contract, including the amount of the deposit, the interest to be paid, methods of repayment, etc.—or by open-book accounts subject to notice of withdrawal. Most time deposits, however, are represented by a passbook which must be presented with every withdrawal of funds. The passbook lists all the deposits and withdrawals, and thus it serves as a record of the depositor's balance with the bank.

As contrasted to time deposits, demand deposits represent current funds of individuals and business concerns held for reasons of convenience in effecting payments. They alone are customarily transferable by check. Since the advent of the monthly statement system, where the depositor receives monthly the statement of his bank balance and canceled checks, the passbook contains merely a set of receipts for deposits made. On January 31, 1952 (Table 19), about

FIGURE 10
PRINCIPAL LIABILITIES AND CAPITAL ACCOUNTS OF ALL
COMMERCIAL BANKS



Source: Board of Governors of the Federal Reserve System.

TABLE 19
OWNERSHIP OF DEMAND DEPOSITS OF INDIVIDUALS, PARTNERSHIPS,
AND CORPORATIONS, JANUARY 31, 1952
(In billions of dollars)

Type of holder		
Domestic business		\$55.7
Nonfinancial, noncorporate	\$11.5	
Nonfinancial, corporate	35.2	
Financial, noncorporate	2.1	
Financial, corporate	6.9	
Individuals		32.7
Other holders		5.6
Total		\$94.0

SOURCE: *Federal Reserve Bulletin* (1952), pp. 483-484.

half the deposit balances of \$94 billion in the checking accounts of individuals, partnerships, and corporations were held by domestic nonfinancial business, one tenth by finance (including foreign depositors and banks' trust departments), and the remainder by individuals.

Included with demand deposits owned by the general public are "certified and officers' checks, cash letters of credit, and traveler's checks outstanding." These are items which are actually in process of being drawn out instead of merely subject to withdrawal on demand. Certified checks are ordinary checks drawn by a depositor on his bank and duly certified by the bank. By certification the bank definitely undertakes the obligation to pay. It immediately deducts the amount of the check from the drawer's deposit account, and the certified check becomes the evidence of the bank's debt. The bank's obligation ceases when the check is paid upon being presented by the bank in which it was deposited. Officers' checks are similar in purpose to certified checks. A depositor may purchase a check drawn by the cashier or other officers upon the bank and send it to his creditor. He pays for it by decreasing his account with the bank; it remains an obligation of the bank until it is presented for payment. Such checks are also used by the bank in making payment for its purchases of supplies, etc. Traveler's checks, issued in a series of stated denominations, are similar in purpose and operation to officers' checks; when issued they are signed, and when negotiated, they then are countersigned by the traveler. Finally, cash letters of credit (also used by travelers) are promises by a bank to pay sight bills drawn on it by the purchaser and cashed for the purchaser by other banks or business concerns.¹

Table 18 presents the gross figures for demand deposits as they appear on the banks' books. In compiling these figures, no allowance is made for the time it takes to collect checks; the checks that are deposited by the payee in his bank swell the total of his deposit balance before they are paid by the bank on which the check is drawn and before the amount of the check is deducted from the deposit account of the writer of the check. To eliminate this double counting, "*adjusted demand deposits*" are computed by deducting the "float" of cash items in process of collection from demand deposits exclusive of interbank and United States Government deposits (that is, from deposits of the general public and of states and political subdivisions). This item measures demand deposits as they would stand on the books of both banks and depositors if nobody drew

¹ Chapter 21, International Finance.

any more checks until those now being collected had been cleared and subtracted from depositors' accounts. On December 30, 1951, adjusted demand deposits of the insured commercial banks totaled \$98,234 million, in contrast to a total of \$124,880 million of demand deposits shown in Table 18. Even the adjusted figure overstates the amount actually available to depositors since it ignores the fact that depositors reduce their balances on their own records as soon as they draw checks, but the recipients of the checks do not increase their balances until they deposit these checks.

REGULATION OF INTEREST PAYMENTS ON DEPOSITS

Payment of interest on time deposits is restricted in two ways. The maximum interest which member banks may pay on time deposits is regulated by the Board of Governors of the Federal Reserve System. Moreover, where state banking authorities have fixed maximum rates of interest payable on time deposits at figures lower than those set by the Board of Governors, the lower state figures become the maximum which can be paid by member banks located in that state. The Federal Deposit Insurance Corporation (FDIC) regulates the maximum rate of interest paid on time deposits by insured banks which are not members of the Federal Reserve System. Rates established by the FDIC have been made the same as those for member banks as shown in Table 20.

Prior to 1933 interest frequently was paid on demand deposits as a result of competition among banks to obtain the larger checking accounts. In large measure these competitive interest payments were made by large city banks to attract the accounts of banks in villages, towns, and small cities. Great concern was expressed by the monetary authorities, who felt that such competition was undesirable on at least two counts. First, it tended to concentrate funds from smaller communities in the large financial centers and thereby deprived business in the smaller communities of loan facilities. Second, the balances of country banks acquired by large city correspondents were very volatile and subject to rapid withdrawal in depression, thus aggravating the depression by compelling city banks to call their loans in order to obtain funds to meet the requests for withdrawals. The Federal Reserve Act as amended in 1933 and 1935 prohibits the payment of interest on demand deposits of member banks; the Federal Deposit Insurance Corporation issued regulations prohibiting interest payments on demand deposits of insured non-member banks.

TABLE 20
MAXIMUM RATES ON TIME DEPOSITS
(Percent per annum)

	Nov. 1, 1933- Jan. 31, 1935	Feb. 1, 1935- Dec. 31, 1935	Effective Jan. 1, 1936
Savings deposits	3	2½	2½
Postal savings deposits	3	2½	2½
Other deposits payable			
In 6 months or more	3	2½	2½
In 90 days to 6 months	3	2½	2
In less than 90 days	3	2½	1

NOTE: Maximum rates that may be paid by member banks as established by the Board of Governors under provisions of Regulation Q. Under this regulation the rate payable by a member bank may not in any event exceed the maximum rate payable by state banks or trust companies on like deposits under the laws of the state in which the member bank is located. Maximum rates that may be paid by insured nonmember banks as established by the FDIC, effective February 1, 1936, are the same as those in effect for member banks.

SOURCE: *Federal Reserve Bulletin*.

SERVICE CHARGES ON DEPOSITS

During the depression following 1929 bankers were faced with declining earnings because of shrinking loan volume and declining interest rates. These lowered earnings had to be used to absorb heavy losses which had to be written off. In the face of falling earnings the bankers were forced to analyze the costs of accepting deposits. As a result of analysis of the costs entailed in handling deposit accounts, banks more widely imposed service charges on unprofitable accounts. Two types of service charges are in common use, the *flat* and the *measured* charge. The flat service charge assesses a monthly charge against accounts in which the average monthly balance falls below a specified figure. The measured charge specifies the number of free checks that may be drawn per unit of balance maintained. Thus, an individual maintaining an average or minimum balance of \$100 may be permitted to draw ten free checks; if the balance falls below this figure, there is a charge of \$1 per account per month. More recently, pressure on banks to develop

additional sources of income has led some to institute a new type of personal checking account which does not require the depositor to maintain a minimum balance but instead charges a fee, for example, per check drawn. Extension of checking account services at moderate expense enables low-income recipients to use checks, hence expands the use of checks as the means of effecting payments.

DEPOSIT STABILITY

The most important obligation of a bank to its depositors is to pay out currency (hand-to-hand money) according to the terms of the deposit contract. This may mean paying out hand-to-hand money over the counter or settling adverse balances at the clearing house for checks drawn on it which have been deposited in other banks. If the bank is to continue in business, it must meet its contractual obligations. Moreover, unless its obligations are met according to the terms of the deposit contract, demand deposits would not be fixed-price assets, would not be generally acceptable by the community, and would not, therefore, qualify as part of the community's money supply.

If the banker were certain that new deposits and withdrawals would actually offset each other every day, the need for hand-to-hand money would be small indeed; in addition, the banker would not require a large volume of liquid (quickly convertible into money) assets. In actual practice a considerable variation in the rate of new deposits and withdrawals exists from day to day. In planning his business operations the banker has to allow for daily, seasonal, and cyclical deposit instability. When deposits decline, the bank has to pay out hand-to-hand money; if these resources are seriously depleted, the bank may have to sell some of its investments or call some of its outstanding loans. In large measure, the types of assets a bank holds depend on whether it can count on its deposits remaining with it.

Generally speaking, bankers normally anticipate most stability in time deposits and least in interbank deposits, with checking accounts of the general public and government deposits in between. The development of deposit insurance, however, may have made all deposits less volatile than in the past.

DEPOSIT PROTECTION

It will be recalled that the principal means of payment in the United States prior to the Civil War were notes issued by banks, mainly state banks. Protection of bank creditors by means

of insurance was employed in a few states before the Civil War and was confined almost exclusively to holders of bank notes. Beginning in 1907, however, eight states—Oklahoma, Kansas, Nebraska, Texas, Mississippi, South Dakota, North Dakota, and Washington—instituted plans (mostly compulsory but in part voluntary) for the insurance of deposits of state banks under their jurisdiction. During the 1920's, however, every one of these plans failed, and the system of state deposit "guaranty" was generally discredited. The failure of the plans was a result of a variety of factors. Insolvent banks were admitted to membership; members were not subject to careful regulation or examination; the risks were not geographically or economically diversified since each plan included only the state banks within a single state. Not only was each of the states which had deposit insurance primarily agricultural, but also many of them were heavily dependent on a single crop. Financing was inadequate; the premiums were insufficient to provide insurance reserves to meet the peak losses in the record number of bank failures that accompanied agricultural depression after World War I.

We have already remarked that the largest fraction of the nation's money supply consists of demand deposits. There are many instances in our economic history when panic shifting of funds from one bank to another and eventual panic withdrawals of funds by the public from the banking system have forced banks to liquidate their assets at very unfavorable times. Distress calling of loans and forced sales of bank investments have led to widespread bank suspensions and drastic reductions of the nation's money supply. The upsurge of bank failures after 1929, following upon the large volume of bank closings throughout the preceding decade, gave rise to a widespread demand for deposit insurance under the sponsorship of the federal government.

In 1933, the end of a period in which thousands of banks had closed, billions of depositors' money had been lost or frozen; huge withdrawals of hand-to-hand money had depleted bank reserves; depositors were afraid to place their money in banks; and bankers were afraid to make loans. A temporary plan of deposit insurance was enacted by the federal government to become effective January 1, 1934. This plan was revised and made permanent in the Banking Act of 1935 and is described as amended in 1950 in the pages that follow.

In its barest outlines, deposit insurance is designed to protect the relatively small depositors against losses on their deposit accounts and thus remove one major cause of instability in the nation's money supply. In addition, deposit insurance was designed to pro-

vide better supervision and examination for thousands of banks that were not members of the Federal Reserve System—a class of banks that had experienced a very high failure rate in the twenties.

The deposit insurance system is administered by the Federal Deposit Insurance Corporation. The FDIC, as it is commonly called, was chartered by the federal government and is managed by a board of three directors composed of the Comptroller of the Currency and two men appointed by the President with the consent of the Senate. The corporation was organized with an original capital of \$289 million; \$150 million of this was subscribed by the United States Treasury and the remainder by the Federal Reserve banks. The capital was retired by the FDIC in 1948.

All member banks of the Federal Reserve System, including both national and state member banks, must participate in the system. Nonmember state banks and mutual savings banks, at their option, may obtain insurance if approved by the FDIC. In passing upon applications for admission into the system, the FDIC considers the following factors: (1) the financial history and condition of the bank, (2) the adequacy of the bank's capital, (3) the bank's earning prospects, (4) the character of bank management, and (5) the need for banking facilities in the community.

An attempt to use the popularity of federal deposit insurance to enlarge the membership of the Federal Reserve System by requiring the larger state banks to join that system if they wished the privilege of federal deposit insurance was abandoned in 1939. At the close of 1951 about 95 percent of the commercial banks of the country, holding about 99 percent of the total commercial bank deposits, were insured with the FDIC. The FDIC, however, does not insure the total deposits of each bank; instead, it insures only the first \$10,000 of each depositor's claim against the bank. Present insurance provisions were estimated to cover about 99 percent of the total number of accounts and about 54 percent of the total deposits in insured banks on September 30, 1951.

In addition to the originally subscribed capital which it retired in 1948, the FDIC receives income from assessments paid by the insured banks and from interest earned on its accumulated funds which are invested in government securities. At the close of 1948 the FDIC had repaid the original subscription to its capital; by the end of 1951 it had accumulated a surplus of approximately \$1.28 billion. Finally, the FDIC may, if necessary, borrow up to \$3 billion from the United States Treasury.

To cover the cost of insurance each bank pays the FDIC an annual

premium equal to $\frac{1}{2}$ of 1 percent of its total deposits. Out of this premium income the corporation first pays its operating expense and losses. Then it adds $\frac{3}{8}$ of the remainder to the insurance fund. The rest of the premium income is credited pro rata to the insured banks, which use this credit in the following year as part payment for premiums which become due in that year. The premium is uniform for all banks, and it does not take account of the heavier failure rate among small banks. The fact that premiums are based on total deposits, instead of the amounts of insured deposits, means that the large metropolitan banks (only a small proportion of whose deposits are covered since they have very large deposits) subsidize the small country banks, whose deposits are almost completely covered. To reduce the complaints of large city banks, the Banking Act of 1933 forbade payment of interest on checking accounts, a practice confined chiefly to the larger banks.

The FDIC actually has two functions: (1) to serve as an agency for keeping their deposits continuously available to depositors in *distressed institutions* and (2) to serve as the insurance agency which absorbs losses arising out of such action. When a bank closes, the FDIC acts at once to maintain the money supply by preventing the freezing of depositors' funds and the shutting off of the community's banking facilities. As fast as claims can be proved, it pays off insured depositors in cash or by making a deposit available either in another local insured bank or in a new national bank that it organizes in case no local banking facilities are available. The FDIC often acts as receiver of closed insured banks; the rights of the insured depositors are subrogated to those of the FDIC, which shares in the bank's assets with depositors having deposits exceeding \$10,000.

The FDIC goes further than alleviating the effects of closing; instead, it seeks to prevent the closings themselves. First, it can decrease the failure rate through its examination and supervision of insured banks. These powers are particularly useful in raising the standards of small state banks that are not members of the Federal Reserve System. Second, when an insured institution gets into financial difficulties, the FDIC can make loans or buy assets to facilitate the merger or consolidation of the distressed bank with another insured bank in the vicinity. This can be done only where such action promises to reduce the cost to the FDIC in the long run. In this way another bank is enabled to assume the obligations of the distressed institution without weakening itself. In such cases all depositors of the distressed institution, irrespective of the size of their balances, are in effect given complete protection. Third, since 1950,

the corporation is authorized, in the discretion of its directors, to make loans to, purchase assets from, or make deposits in any insured bank in danger of closing if continued operation of the bank is essential to provide adequate banking facilities for the community.

What is the record of the FDIC? It paid out \$87 million in connection with the \$110 million of deposits in the 245 insured banks that went into receivership in the years 1933-1951. During this period, it also disbursed \$191 million in giving financial assistance to 172 insured banks having deposits of \$427 million. The \$191 million includes \$45 million disbursed to protect assets during liquidation and expenses incurred in connection with liquidations. In protecting this total of \$537 million of deposits the FDIC has incurred losses and set up reserves totaling \$27 million, or 4.9 percent of deposits in the banks assisted and an insignificant fraction of 1 percent of all deposits in all insured banks.² The record, by years, is shown in Figure 11.

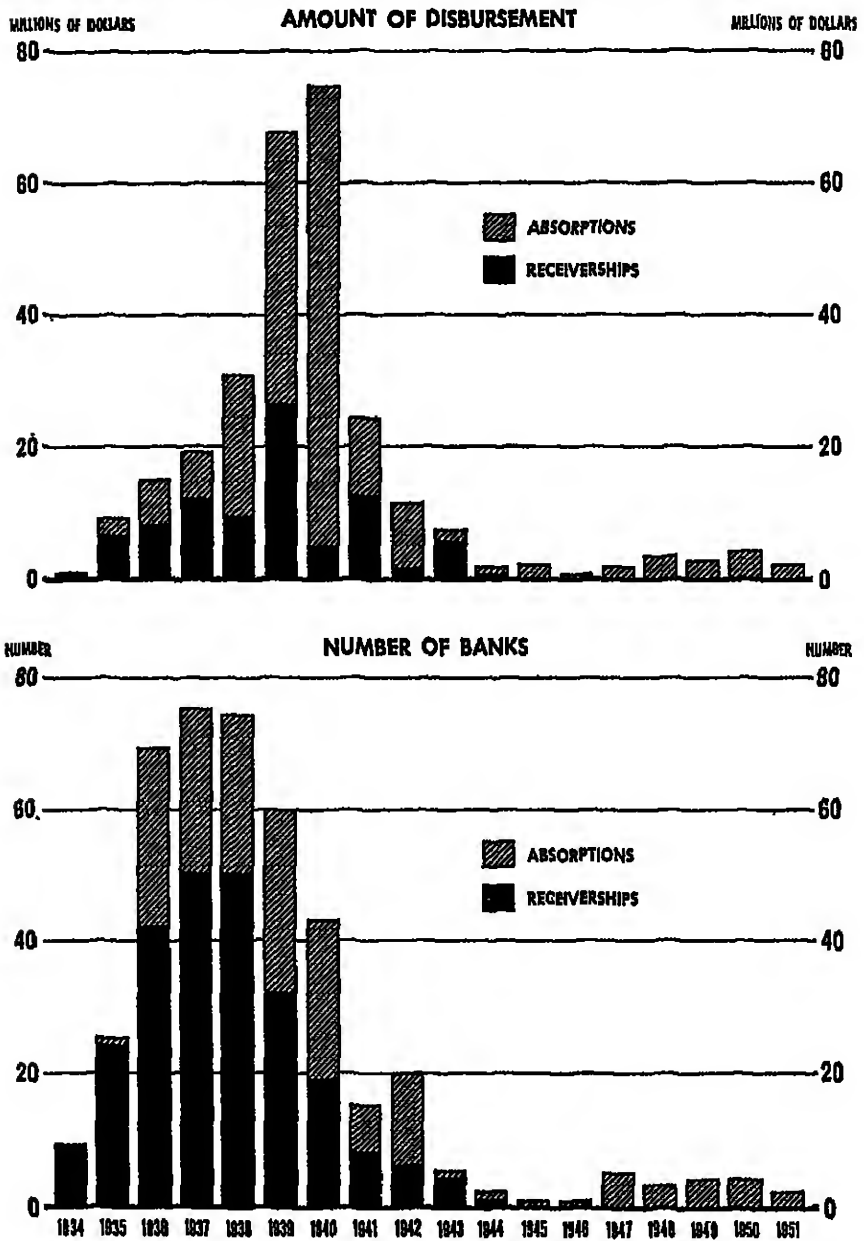
The question arises, is the future outlook as bright as this record implies? In answering it must be remembered that the size of the revolving fund needed by the FDIC in its liquidating and merger capacities far exceeds that needed in its insurance capacity; the latter merely represents the difference between the realized value of the assets and the amount paid to meet depositors' claims. In appraising the future of deposit insurance we must remember (1) failures have been very light because of the purge of banks culminating in the Banking Holiday of 1933 and the subsequent recovery in economic activity and (2) historically over the 70 years from 1863-1933 the average annual loss to depositors in suspended commercial banks was $\frac{1}{6}$ of 1 percent of deposits in operating banks. About two thirds of the total loss of \$2.7 billion occurred in 12 years, and about half of the \$2.7 billion occurred in the 4 years 1930-1933. If history were to repeat itself, the system would be actuarially unsound; failures might be so heavy that the FDIC's reserve (now equal to $\frac{1}{10}$ of 1 percent of total and 1.3 percent of insured deposits in insured banks) would be all tied up in its claims against banks in receivership so that it could not go on paying depositors without help from the Treasury.

On its part, the FDIC, as we have seen, has urged sound practice on the banks, in particular, building up their capital accounts. Underlying the aggregate situation of the banks, too, is the factor of possible greater stability in the economic system as a whole as well as in the money supply in the future. Undoubtedly, the failure

² Losses suffered by depositors on uninsured deposits were less than \$2 million.

FIGURE 11

DISBURSEMENTS BY THE FEDERAL DEPOSIT INSURANCE CORPORATION
TO PROTECT DEPOSITORS IN INSURED BANKS, 1934-1951



SOURCE: Division of Research and Statistics, Federal Deposit Insurance Corporation.

record of the deposit insurance system to date cannot be regarded as typical for the future, although it is equally unlikely that the record bank failures of the past century will be duplicated. Even if the future should find premiums and accumulated funds inadequate, in the eyes of the man on the street the deposit insurance system carries a moral obligation on the part of the government to repair the deficiency of frozen bank deposits, which the holders of deposit accounts would undoubtedly call on it to assume.

■ BORROWINGS AND OTHER LIABILITIES

We have seen that the bulk of commercial banks' sources of funds are debts which banks contract in the form of deposit balances; ² a very much smaller fraction of bank funds represent the ownership contribution of bank stockholders which appear in the capital accounts. In addition to these sources of funds, banks can and do supplement their funds by borrowing from other banks, either correspondents in larger centers or Federal Reserve banks. Such borrowing may take the form of rediscounts or bills payable. A *rediscount* is a sale by the borrowing bank with its endorsement of loans it holds; while contingent in form, it is regarded as a direct liability of the bank. *Bills payable* are promissory notes issued by the borrowing bank and secured either by loans the bank has made or by other assets, mainly bonds, that it owns. Excluding bills payable to and rediscounts with Federal Reserve banks, national banks may not have outstanding bills payable and rediscounts in excess of their paid-in and unimpaired capital stock.

Acceptances outstanding are included in Table 15 with other liabilities. They represent bankers' acceptances executed by the bank for its customers (less its own acceptances which it purchased and has therefore included in its own loans) as well as those executed by other banks for the reporting bank. Acceptances arise from an agreement by a bank which for a commission accepts bills drawn on it that are payable at a later date under the terms of a commercial letter of credit or acceptance agreement. The sale of the bill or acceptance to some other bank, as noted in Chapter 4, actually provides the funds. Since customers are obligated to place with the bank adequate funds to enable the bank to meet at maturity the

² In the latter part of the nineteenth century national bank notes provided a large fraction of the nation's money supply. These notes were liabilities of the issuing national bank and were a source of funds for banks in the same way as are deposits. In 1935 provision was made for retirement of the national bank note; hence, they are no longer a source of funds for banks and are not shown in Table 15.

acceptance created on the customer's behalf, there is on the bank's books a *contra* asset item, which represents the customer's liability on account of the acceptance, less any prepayment which the customer makes. The conditions under which banks may exercise acceptance powers are restricted by law, and they are considered in Chapter 10.

There are a few miscellaneous items included among other liabilities. They consist of such items which are self-explanatory, as reserves for dividends declared but not yet payable, income collected but not yet earned, and expenses accrued and unpaid. The remaining item is the liability to return borrowed securities; it should be remembered, however, that the securities themselves are a *contra* item which are included among the assets.

QUESTIONS AND PROBLEMS

1. a. What information does the usual bank statement afford as to the quality of the institution's assets?
b. Should banks be required to supplement the balance sheets they publish by profit and loss statements?
2. a. "A consolidated statement of all our banks (January 1933) shows that for each \$100 of assorted assets which the banks held, they owed \$85 to depositors and \$15 to stockholders (capital and surplus). . . . Any business organized on a 15-percent margin of capital to liabilities, is only a fair-weather business." (G. B. Robinson, *Monetary Mischief*, New York, 1935, pp. 122, 126.) Do you agree with this view?
b. At the close of 1951 the margin of capital was less than 7 percent, or less than half that in 1933. Does this mean a corresponding weakening of the banks' position? Explain.
3. How does each of the following factors affect the proportion which checks bear to the total amount of payments in the United States:
 - a. Comparative sparseness of population.
 - b. Proportion of retail and wholesale trade.
 - c. Economic activity of the region, whether agricultural or industrial.
 - d. Habit of paying wages by check.
 - e. Season of the year.
 - f. Status of business confidence.
 - g. Range of incomes.
4. a. Why do students of money and banking prefer to use demand deposits-adjusted in their studies, instead of gross demand deposits?
b. "When changes in the volume of business and financial activity are considered, it is found that they are accompanied by alterations in debits to depositors' accounts and in exchange or transactions velocity rather than by variation in the amount of adjusted demand

- deposits." If this be so, what interest does the banker have in the activity of his depositors' accounts?
5. a. Strictly speaking, is the FDIC a mutual insurance company?
 - b. Which of its two actual functions do you regard as more important? Relate each of its functions to its need for funds with which to operate.
 6. a. "The real basis for the charge of premiums on uninsured deposits is to be found in the fact that many of the small banks are not paying their way and cannot afford to pay their appropriate share of the insurance cost." (J. Viner, *American Economic Review, Supplement*, 1936, p. 112.) Is this desirable? Why or why not?
 - b. When it aids in merging insured banks, the FDIC in effect undertakes to protect depositors fully, instead of limiting its protection to \$10,000 per depositor. Explain.
 - c. If "deposit insurance is good only so long as through careful supervision and efficient management the general banking situation is kept in a sound condition" (A. E. Wilde, *Banking*, Section 2, September 1936, p. 5), is deposit insurance then necessary?
 7. Indicate the amount of changes in the appropriate items in a national bank's statement that would arise from each of the following transactions:
 - a. The RFC buys \$10,000 of the bank's preferred stock, paying in a check on the Federal Reserve bank of the district.
 - b. The bank receives on deposit in checking accounts (1) \$1,000 in cash (2) \$3,000 in checks on other banks that can be sent to the Federal Reserve bank for collection, and (3) \$2,000 in checks on itself.
 - c. The Federal Reserve bank rediscounts for the bank at the rate of 2 percent \$50,000 of its loans to customers, with an average maturity of 90 days, giving the bank half the sum in Federal Reserve notes and half in a credit on the Reserve bank's books.
 - d. A bankers' acceptance for \$2,000 which the bank has created for a customer falls due and is presented for payment. Payment is made by check on the bank's account with the Federal Reserve bank, and the account of the customer is charged.

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CHAPTER 8

Bank Operations:

USES OF FUNDS

WE SAW in Chapter 7 that over 90 percent of the banks' sources of funds are deposits. The main obligation of a bank to its depositors is to give them cash for their deposit when called upon. This may entail paying out currency over the counter or settling adverse clearing balances for checks drawn on it which have found their way to other banks.

The present chapter describes the various forms that bank assets take and, in so doing, indicates the services rendered to the community by commercial banks as sources of loanable funds. The succeeding chapter considers the problems faced by banks in building up and managing the proportions of various types of assets they will hold.

■ CASH ASSETS

The cash assets of commercial banks are frequently described as *primary reserves*. These assets enable the banks to meet their legal obligation to convert demand deposits into cash on demand. The primary reserves of the banks consist of currency in their vaults and demand deposits with other banks. Banks that are members of the Federal Reserve System are required by law to carry deposits equal to a fractional part of average deposits with the Federal Reserve bank of their district; these reserves are known as

legal reserves. In addition, banks normally carry deposit balances with other banks in the country.

The necessity for cash reserves has been universally demonstrated wherever commercial banking has developed. Prudent bankers have usually developed standards for the maintenance of cash based upon experience. In many countries the size of the cash assets is ordinarily left to the discretion of the individual institution. The epidemics of bank failures in the history of the United States with its many unit banks would imply that our bankers, in the past, have operated beyond the bounds of prudence. In order to compel uniform minimum standards of prudence in our country, minimum ratios of reserves to average depositors' balances are prescribed by law.

The prevailing legal reserve requirements depend upon the status of the bank involved. The legal reserve percentages for members of the Federal Reserve System are set forth in the Federal Reserve Act and are administered by the Board of Governors of the Federal Reserve System. Legal reserves of member banks consist exclusively of deposits on the books of the district Federal Reserve banks. The present minimum and maximum legal reserve requirements on net demand deposits¹ are according to the location of the bank: central reserve cities, 13 and 26 percent; reserve cities, 10 and 20 percent; country, 7 and 14 percent, respectively; on time deposits at all member banks, 3 and 6 percent, respectively. Legal reserve requirements in effect July 1, 1952, on net demand deposits were 24, 20, and 14 percent for central reserve cities, reserve cities, and country, respectively, and 6 percent on time deposits of all member banks. Banks are free to hold more than the required minimum amount of reserves should they choose to do so. At one time during the 1930's, in fact, excess reserves held were actually much greater than the required reserves.

Nonmember banks must meet the reserve requirements of the laws of the state in which they are chartered. While the laws in each of the forty-eight states show great variation, the common characteristics of state legal reserve requirements are: (1) they usually permit the bank to count balances with other banks as part of the legal reserve, and (2) cash held by the bank may also be counted as part of the bank's legal reserves.

Among the cash assets of commercial banks the most important in terms of size (Table 21) is the legal reserve account of member banks, held in the form of demand balances at the Federal Reserve banks. Deposits at other banks (interbank deposits) are the next

¹ Defined as gross demand deposits less balances due from other domestic banks and cash items in the process of collection.

TABLE 21

CASH ASSETS OF INSURED COMMERCIAL BANKS, DECEMBER 31, 1951

	Millions of dollars	Percent of total
Cash in vault (coin and paper money)	\$ 2,686	6.07
Reserve balances with Federal Reserve banks (by member banks)	19,911	45.00
Demand balances with other banks in the United States *	11,557	26.12
Other balances with other banks in the United States	41	.09
Balances with banks in foreign countries	49	.11
Cash items in process of collection	9,998	22.60
Total	\$44,242	100.00

SOURCE: Federal Deposit Insurance Corporation.

* Except private banks and foreign branches of American banks.

largest of commercial banks' cash assets in point of size. As we noted previously, nonmember banks are permitted by most state laws to count interbank deposits as part of their legal reserves.

Interbank deposits arise from bank correspondent relationships. In our country there is an extensive network of correspondent relationships. Small rural banks maintain deposits with banks in adjoining cities; banks in small cities who act as correspondents for banks in rural areas keep balances with banks in larger cities; banks in the larger cities, in turn, often maintain balances with the very large banks in New York City and Chicago.

Why do banks serve as correspondents? A correspondent bank generally receives funds in the form of demand deposits on which it pays no interest. It can, in turn, use these funds to support loans and investments on which it earns income. In addition, the correspondent may require the banks for whom it serves to pay service charges.

Why do banks use correspondents? Small banks frequently call upon their correspondents for advice in selecting securities for investment or for other management problems. Banks make use of their deposits with correspondents by routing checks through the latter who clear and collect the checks; correspondents also collect payments at maturity on securities owned by small rural banks. A bank maintaining deposit balances in banks in foreign countries can draw

drafts against its account and sell them to its customers who have to make payments abroad.

Originally, legal reserve requirements were visualized as compelling commercial banks to maintain prudent standards of liquidity in order to meet promptly withdrawals of deposits in cash. Through the years this conception of legal reserves has changed, and it is now generally recognized that legal reserves constitute funds that add little, if anything, to the direct liquidity of a bank. The law does not permit these reserves to be depleted for any extended period in order to meet demands for cash. Moreover, if a customer withdraws \$1 million of deposits in cash, the bank can reduce its legal reserves by only \$200,000 (20 percent of \$1 million), which we shall assume it withdraws in Federal Reserve notes from the Federal Reserve bank. It must look elsewhere than to its legal reserve for the remaining \$800,000.

As a precaution against unforeseen adverse clearing house drains or unexpected net withdrawals of deposits in currency, banks carry *working* reserves in excess of their legal minimum reserve requirements. The working reserves of member banks consist of (1) cash in their own vaults, (2) demand deposits with other banks, and (3) excess reserves with the Federal Reserve banks. For nonmember banks working reserves consist of cash in their vaults and demand deposits with other banks in excess of the legal reserve requirements of their state.

It will be noted in Table 21 that vault cash held by the banks is relatively small, amounting to 6 percent of cash assets and to only 1.5 percent of total bank assets. The amount of vault cash needed varies widely among banks, and at a given bank cash requirements vary from season to season. Banks are the cash warehouses for the community, and these institutions regard having enough cash on hand to take care of the regular and exceptional requirements as one of their important functions. If insufficient cash is received over the counter to meet demands upon them, most banks replenish their supply of cash from the nearest Federal Reserve bank, although some get it from their city correspondent. No matter what the source, the size of vault cash is related to the length of time it takes to acquire additional sums.

Cash items in process of collection include checks, promissory notes, and other matured items that banks own and that are in process of being collected but for which payment has not yet been received. While this item bulks large in the statement, it does not provide usable funds in the same way as do deposits at other banks or coin and paper money. Instead, the individual bank must reckon

that checks on the way to it roughly offset checks it has sent on the way to other banks.

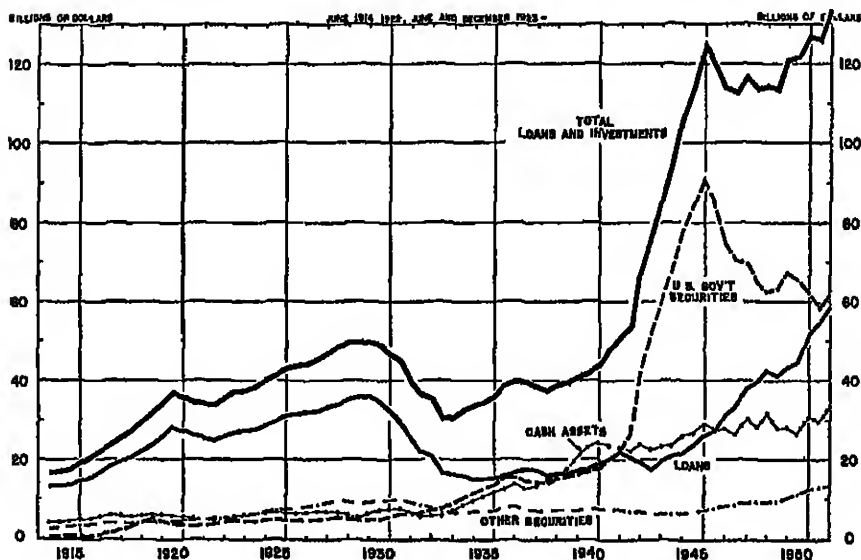
■ EARNING ASSETS: INVESTMENTS

Banks do earn small revenues from service charges paid by their customers and from renting office space and safe deposit vaults, but the bulk of the banks' income is earned from interest received on their loans and investments. In banking circles it is customary to distinguish cash assets from earning assets on the banks' balance sheets and to further divide the earning assets into loans and investments. It is well to recall that changes in demand deposits result principally from changes in the volume of banks' loans and investments.

The traditional view of commercial banking, dating back to the eighteenth and nineteenth centuries in Europe, is that the banks' assets should consist principally of short-term commercial loans. By holding these short-term assets the banks, it was argued, would possess the most liquid earning assets and would, therefore, be able to meet their demand deposit liabilities when called upon to do so. Prior to World War I few commercial banks in the United States ever purchased investment securities except for small quantities of United States Government bonds, which were necessary as collateral for national bank note issues or were needed as security for government deposits with the banks. As can be seen in Figure 12, bank loans were the dominant earning assets of the commercial banks from 1914 through the decade of the 1920's. It is noteworthy that during World War I banks' holdings of government securities increased somewhat, but loans were still the dominant form of bank earning assets. In the later twenties banks' holdings of investment securities other than government obligations rose somewhat only to decline after the collapse of the securities markets in 1929. In the 1930's bank loans declined sharply, and banks seeking outlets for their funds were ready purchasers of the increasing quantities of government securities issued to finance the Treasury's budgetary deficits. In the early 1940's banks increased their holding of government securities very sharply, and as can be seen in Figure 12, government securities in the hands of the banks far outstripped the volume of bank loans. The Treasury's debt retirement program and increased demand for bank loans after 1945 had the effect of increasing the relative importance of bank loans among bank assets although holdings of United States government obligations still exceed loans outstanding.

It is clear from Table 22 that securities issued by the United States Government accounted for most of the banks' investments at the end of 1951. There are a variety of government securities held by the banks. *Treasury bills* are usually issued weekly by the Treasury and mature in 3 months. Offered for competitive bidding, they are sold at a discount—below face value—and are repaid at face value

FIGURE 12
PRINCIPAL ASSETS OF ALL COMMERCIAL BANKS



SOURCE. Board of Governors of the Federal Reserve System.

at maturity; the difference between the face value and the price at which they are sold represents the interest earned by the holder. *Certificates of indebtedness* are issued less regularly than Treasury bills and ordinarily mature in 9 months or 1 year; certificates are issued at a fixed rate and carry low coupon rates of interest. Since the Treasury retires both bills and certificates at maturity by paying the holders with checks against its accounts with the Federal Reserve banks, they are continually being turned into cash; a bank holding bills or certificates can quickly build up its cash reserves by failing to buy new issues as their old ones mature. Should the holder of Treasury bills or certificates wish to sell his security before maturity in order to obtain cash, he can readily find a purchaser as there is an active market for such securities. In fact, during World War II

TABLE 22

INVESTMENTS OF INSURED COMMERCIAL BANKS, DECEMBER 31, 1951

	Millions of dollars	Percent of total
Obligations of the United States Govern- ment	\$60,599	82.25
Direct		
Treasury bills	\$ 7,223	9.80
Treasury certificates of indebtedness	7,536	10.23
Treasury notes	11,274	15.30
U. S. nonmarketable bonds	2,487	3.38
Other bonds maturing in:		
5 years or less	19,645	26.66
5 to 10 years	7,024	9.53
10 to 20 years	3,055	4.15
After 20 years	2,335	3.17
Guaranteed obligations	21	.03
Other securities	\$13,074	17.75
Obligations of states and political sub- divisions	\$ 9,016	12.24
Other bonds, notes and debentures	3,720	5.05
Corporate stocks:		
Federal Reserve banks	237	.32
Other corporate	101	.14
Total	\$73,678	100.00

SOURCE: Federal Deposit Insurance Corporation.

and through the middle of 1947 the Federal Reserve banks agreed to purchase all bills offered at a rate of $\frac{3}{8}$ of 1 percent per annum and all certificates at a rate of $\frac{1}{8}$ of 1 percent. As long as the Reserve banks maintained these fixed buying rates, these two issues were really the equivalent of cash. Since the middle of 1947 there is less certainty in the price of bills and certificates, and they are not in the same degree the equivalent of cash.

Treasury notes usually are issued with 3- to 5-year maturities and carry a somewhat higher rate of return than do either bills or certificates. It is, however, true that if the holder should be forced to sell a Treasury note before maturity, there is more uncertainty as to the price he can get than is true of the shorter-term securities

although the market should yield a price near par. *Treasury bonds* are the long-term obligations of the federal government bearing interest and with maturities as much as 20 years or more away. The longer the maturity of the bond, the greater is the fluctuation in market price² so that a holder may suffer a loss if he is forced to sell on short notice. As long as the Federal Reserve System was pledged to prevent long-term United States Government bond prices from falling below par, the banks were assured of selling these securities in the market for at least par, and these bonds were nearly the equivalent of cash. In the spring of 1951 the Federal Reserve System ceased to support government bond prices at par, and for the first time since 1939 the long-term issues were sold below par. Since some issues sold for less than ninety-seven, many banks were hesitant to sell these issues in order to acquire reserves because they would realize losses on their investments.

Before World War II commercial banks were free to purchase all marketable government bonds regardless of maturity. During the war the government desired to encourage the maximum purchase of Treasury issues by nonbank investors since this course of action would not increase the money supply. In order to encourage nonbank investors, long-term bonds bearing higher rates of interest than those on shorter issues were made ineligible for purchase by a bank ("restricted") for a number of years after issue.

The Treasury also issues nonmarketable securities which are non-transferable, hence cannot be sold although they can be redeemed before maturity at the Treasury or its fiscal representatives. The nonmarketable securities consist of savings bonds, savings notes, and miscellaneous issues.

United States savings bonds have been issued since 1935. On May 1, 1952, several modifications were made. Series A to E were sold at a discount of 25 percent. Holders of E bonds were permitted to extend them as they fell due for an additional 10-year period, with interest accumulating at the rate of 3 percent. The maturity of newly issued E bonds was reduced from 10 years to 9 years 8 months, to increase their yield if held to maturity from 2.9 to 3 percent. The bonds may be redeemed before maturity, the yield rising more rapidly than before from zero as the redemption date approaches maturity. Series J and K bonds replace the former F and G issues. Series J is a 12-year discount bond sold at 72 percent of maturity value. If held to maturity, its yield is 2.76 percent, but like the Series E bonds its yield declines if redeemed before maturity. Series K is a 12-year bond sold at par which bears interest at the rate of

² See Chapter 9, pp. 202 ff.

2.76 per annum. If not held to maturity, the yield is graduated downward by redemption values less than par. A new Series H bond sold at par matures in 9 years 8 months and pays interest currently at an ascending scale as close as possible to that borne by E bonds. The redemption plan for savings bonds is designed (1) to encourage owners to hold them to maturity to get the benefits of the higher yield and (2) to assure owners of fixed redemption values rather than subject them to the risks of varying market prices as is true of marketable issues sold before maturity.

Treasury savings notes are sold at par and mature in three years. They are designed to meet the needs of federal taxpayers and are acceptable in payment of any federal tax. The tax payment and redemption values of these securities are graduated upward from par so that the investment yield rises from their second month, with the length of time the issue is held. Armed forces leave bonds were issued to servicemen in settlement of their accumulated leave balances and mature in 5 years. They bear interest at $2\frac{1}{2}$ percent per annum; the first became redeemable at par and accrued interest after September 1947.

Special issues of the Treasury consist of notes and certificates issued to government agencies and trust funds. In the 1930's the Treasury guaranteed the principal and interest for certain federal agencies which issued their own obligations. In 1941 this practice was discontinued, and the agencies received funds directly from the Treasury, which, in turn, received the obligations of the agencies. The amount of guaranteed issues has declined steadily since that year.

The commercial banks held nonmarketable issues of government debt, such as United States savings bonds and depository bonds, which serve as security for government deposits with the banks. In addition to these issues which are the direct obligations of the Treasury, banks held small amounts of Federal Housing Administration debenture bonds which are guaranteed by the government.

Banks also held smaller quantities of other securities. Securities of state and local governments (often called "municipals") are subject to wider price fluctuations than is true of "governments," but they have the added attraction that interest income on these bonds is exempt from federal income taxes.

Corporate bonds differ widely in quality. The risk of default in depression is considerable, and the variation in market price is much greater than with government bonds. On the other hand, corporate bonds yield higher returns. In December 1951, as is seen in Figure 13, A a a bonds yielded 3.01 percent, B a a bonds yielded 3.61 percent,

high-grade (tax exempt) municipals yielded 2.10 percent, and (taxable) government bonds with maturities of twelve years or more yielded 2.70 percent.

Bank holdings of stock are of minor importance. When a member bank joins the Federal Reserve System, it is required to hold stock in the Federal Reserve bank of its district in an amount determined by its own capital. These shares are an absolutely safe investment and pay dividends of 6 percent. Other shares of stock include stocks in subsidiaries as safe deposit companies and affiliated banks. Some stocks owned by banks have been acquired through default on a loan where the stock served as collateral.

■ BANK LOANS

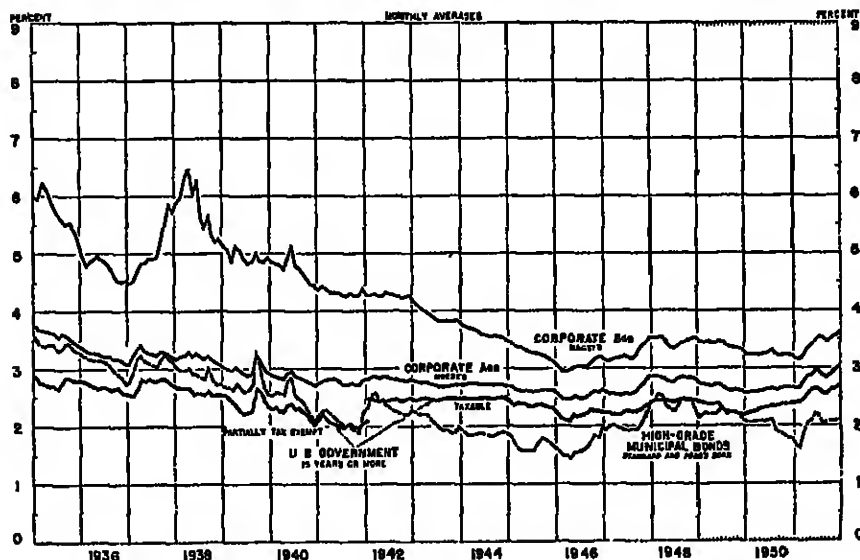
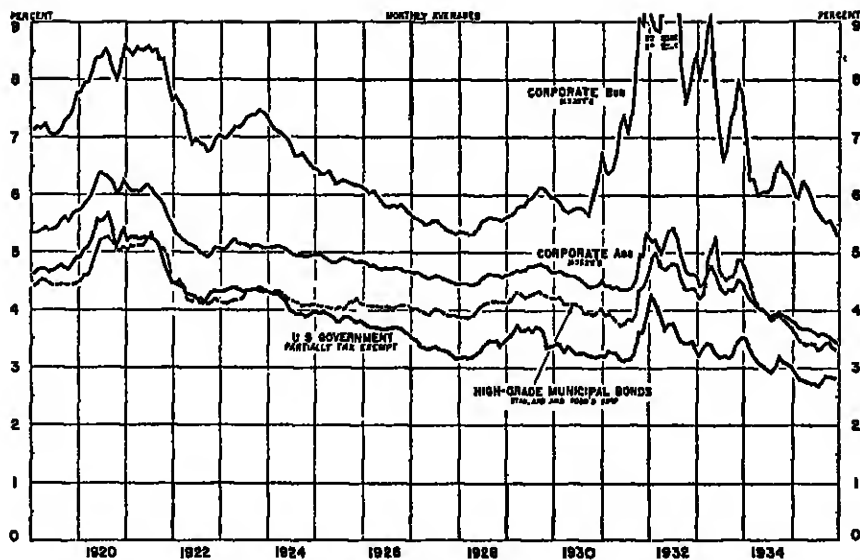
Bank loans are important to the bank because they account for a large fraction of its income. Bank loans are important to us also because they affect the level of economic activity in two major ways: (1) expansions and contractions of bank loans alter the nation's money supply, and (2) the type of economic activity which is supported by the extension of bank loans influences what is produced, how much of each product is produced, as well as where the products are turned out.

Like many economic data, bank loans can be classified in a variety of ways. In addition to the classification of loans employed by the FDIC (Table 28), which is based mainly on the purpose of the loan,⁸ the more important groupings are:

1. *By form.* In a *loan* the bank buys for its face amount an interest-bearing note payable in the future and collects interest either at maturity or periodically. An example of a loan would be the sale to the bank for \$100 of a note for \$100 due in 1 year and paying 6 percent interest. At the end of the year the customer would pay the bank \$100 in principal and \$6 in interest. In a *discount*, however, the bank buys for its present value a noninterest-bearing note payable in the future. For example, the bank discounts a \$100 note due in 1 year at 6 percent and credits the man's account for \$94; when the note matures, the man would owe the bank \$100. Note that a discount always bears a higher rate of interest than a loan. In our examples, a \$6 discount is a larger percentage of \$94 than is \$6 on the \$100 loan. *Overdrafts* occur when a bank honors a check written in excess of a depositor's balance; unlike Great Britain,

⁸ The classification of loans in Table 28 is not based exclusively on the purpose of the loan. In part these loans are classified by the business in which the borrower is engaged (for example, loans to banks).

FIGURE 13
BOND YIELDS



SOURCE: Board of Governors of the Federal Reserve System.

TABLE 23
LOANS AND DISCOUNTS OF INSURED COMMERCIAL BANKS,
DECEMBER 31, 1951

	Millions of dollars	Percent of total
Commercial and industrial loans (including open-market paper)	\$25,788	44.32
Loans to farmers (excluding loans on real estate)	3,831	5.72
Loans for purchasing or carrying securities	2,532	4.35
To brokers and dealers	1,571	2.70
To others	961	1.65
Real estate loans	14,487	24.90
On farm lands	983	1.69
On residential properties	11,081	19.04
On other properties	2,423	4.16
Consumer loans	10,399	17.87
Retail automobile installment paper	2,724	4.68
Other retail installment paper	1,344	2.31
Repair and modernization installment loans	1,150	1.98
Installment cash loans	1,463	2.51
Single-payment loans	3,718	6.39
Loans to banks	149	.26
All other loans (including overdrafts)	1,498	2.57
Total, gross	\$58,184	100.00
Valuation reserves	814	
	<u>\$57,371</u>	

SOURCE: Federal Deposit Insurance Corporation.

where banks commonly permit prearranged overdrafts for a fee, American banks do not approve the practice.

2. By maturity. *Demand loans* have no definite maturity date, but they are callable at any time by the lender and are payable at any time at the option of the borrower. *Time loans* have a definite maturity date, but they may be repaid before maturity with a rebate of discount for the unexpired period. At the lender's option, however, demand loans may be allowed to run indefinitely, and time loans may be renewed.

3. By security. Unsecured (straight or clean) loans are distinguished from loans secured by collateral or by endorsement or guarantee of outside parties.

4. By borrower. Loans to customers (regular depositors) are distinguished from loans to outsiders made in the open market. The customers' loan market is characterized by personal relations between the bank and its depositors. In the customers' loan market the banker is under pressure to grant the reasonable requests of his customers for loans because the continued success of the bank depends on its ability to retain the patronage of its customers. Extensions and renewals of customer loans are common. Loans to outsiders are impersonal; the lender, who purchases the open-market paper does not anticipate establishing a continuous debtor-creditor relationship with the borrower, who offers the paper for sale in the open market. The borrower offers the paper for sale by turning it over to a middleman, who finds a buyer for it; when an open-market loan matures, it must be paid.⁴

COMMERCIAL LOANS

Commercial banking arose when business was more commercial and less industrial than it now is. In the eighteenth century trade and commerce were important economic activities while manufacturing and industry accounted for a much smaller fraction of the total economic endeavor. According to the strict traditional definition, commercial loans are granted for commercial purposes as distinguished from loans for investment, speculative, or consumption purposes. A prime illustration of the traditional commercial loan would be one having a maturity of less than 1 year (preferably, not in excess of 90 days), the proceeds of which are designed to enable the borrower to buy merchandise and make sufficient sales to provide him with funds for repayment of the debt. Thus, it is alleged that short maturity meets the typical commercial credit needs of business and also enables the commercial banks to secure the cash needed to meet their demand liabilities.

While the banking authorities still adhere to their classification "commercial and industrial loans," the student must remember that loans included in this category consist of commercial and capital loans. In November 1946 over one third of the amount of commercial and industrial loans of the member banks of the Federal Reserve System had an initial maturity of more than one year. Moreover, many of the loans with shorter maturities are renewed many times and, therefore, are not short-term loans in fact.

A large fraction of the commercial banks' loans are made on some form of security. In 1946 roughly two thirds of the number of busi-

⁴ See Chapter 10 for a more extended discussion of open-market loans.

ness loans accounting for 44 percent of the amount of loans were secured. As can be seen in Table 24, the most important categories of security or collateral are: (1) inventories, where the loan is secured by collateral consisting of bills of lading, warehouse receipts, and

TABLE 24

BUSINESS LOANS OF MEMBER BANKS OF THE FEDERAL RESERVE SYSTEM
NOVEMBER 20, 1946, BY TYPES OF SECURITY

(Estimates of outstanding loans)

Major type of security	Amount of loans (in millions)	Number of loans (in thousands)	Percentage distribution	
			Amount	Number
Unsecured	\$ 7,322	299	55.3	35.6
Secured	5,799	410	43.8	61.1
No information	116	22	0.9	3.3
All loans	\$13,237	671	100.0	100.0
Secured:				
Endorsed and comaker	\$ 706	76	12.2	18.5
Inventories	1,195	35	20.6	8.6
Bonded warehouse receipts	420	7	7.2	1.8
Field warehouse receipts	62	1	1.1	0.3
Other warehouse receipts	458	7	7.9	1.8
Other inventories	255	19	4.4	4.7
Equipment	706	111	12.2	27.1
Assignment of title on equipment	102	10	1.8	2.5
Chattel mortgage on equipment	604	101	10.4	24.6
Plant or other real estate	943	77	16.3	18.7
Stocks, bonds, and mortgages	1,075	46	18.5	11.3
U. S. Government securities	368	17	6.3	4.1
Other bonds	90	2	1.6	0.5
Listed stocks	297	18	5.1	4.5
Unlisted stocks	190	6	3.3	1.6
Assignment of deed of trust or mortgage on property not owned by the borrower	180	2	2.2	0.6
Accounts receivable	190	13	3.3	3.1
Life insurance	148	22	2.6	5.3
Oil runs	191	2	3.3	0.5
Assignment of claims	314	20	5.4	4.8
Assignment of government claims	21	(..) ^a	0.4	0.2
Assignment of claims against other than government	274	13	4.7	3.2
Savings accounts	19	6	0.3	1.5

TABLE 24.—*Continued*

**BUSINESS LOANS OF MEMBER BANKS OF THE FEDERAL RESERVE SYSTEM
NOVEMBER 20, 1946, BY TYPES OF SECURITY**

(Estimates of outstanding loans)

Major type of security	Amount of loans (in millions)	Number of loans (in thousands)	Percentage distribution	
			Amount	Number
Government participation or guarantee	\$ 119	2	2.1	0.6
V, VT or T loans	22	(..) ^a	0.4	(..) ^a
RFC participation	64	1	1.1	0.3
RFC blanket guarantee	32	1	0.6	0.2
Federal Reserve bank partici- pation or guarantee	1	(..) ^a	(..) ^a	(..) ^a
Other security	212	5	8.7	1.5
All secured loans	\$5,799	410	100.0	100.0
G.I. guarantee or insurance—partial security ^b	\$54	16	0.4	2.4

NOTE: Figures may not add to total because of rounding.

SOURCE: Tynan Smith, "Security Pledged on Member Bank Loans to Business," *Federal Reserve Bulletin* (1947), p. 665.

^a Less than 500 loans or 0.05 percent.

^b Where G.I. guarantee or insurance is not the primary security, these loans are classified according to major collateral; otherwise they are classified under "other security."

trust receipts which convey title to goods in transit or storage; (2) stocks, bonds, and mortgages; (3) endorsements and comakers; (4) liens on equipment or assignment of title to equipment.

Large companies, with higher credit standings and detailed balance sheets and income statements attested to by responsible accounting firms, are usually able to borrow without the pledge of collateral. The principal form of unsecured bank borrowing is the single-name unsecured promissory note. Commercial loans are commonly evidenced by the borrower's promissory note because of the practice in the United States of making credit sales on open-book account with a good discount offered for cash payments.⁵ The buyer whose credit is good may borrow from the bank on his own straight note in order to take the cash discount, since the latter is at a rate in

⁵ See Chapter 4, p. 71.

excess of that charged by the bank. Where credit terms are 2 percent for payment in 10 days and net terms for payment in 30 days, the person using the net terms foregoes 2 percent interest for having a credit extended for 20 days. This makes the annual interest cost 36 percent (360 days divided by 20 days equals 18, times 2 percent equals 36 percent), which is considerably higher than the interest charged on a bank loan. The seller of the merchandise may borrow from the bank on his own straight note in order to carry his accounts receivable from those buyers who do not pay cash but take the net terms. In either case, the sale of the merchandise provides funds with which to pay off the bank loan. Thus, the credit period (net term) prevailing in a particular industry influences the maturity of bank loans, while the existence of the cash discount open-account system influences the form of the bank loans.

Since unsecured commercial loans are made for relatively short periods of time, the bank's credit analysis is concerned primarily with the relation of the borrower's current income and current assets and liabilities. While the loan applicant's liquidity is of major importance, the bank also studies the ultimate solvency of the would-be borrower. The bank is more thorough in its study of the four C's of credit than is the average business concern. The bank employs secondary sources of information, such as mercantile agencies and credit bureaus, to supplement both the financial statement it obtains directly from the borrower and the inquiries it makes of other banks and business concerns.

In many cases where a bank's customer wishes to borrow at intervals during a season, the bank will analyze his credit standing and establish a maximum *line of credit*. The line of credit imposes no legal obligation upon the bank; but if the customer's credit standing remains basically unchanged, he may anticipate obtaining loans up to the amount agreed upon. The customer is under no legal obligation to utilize all or part of the line of credit. In recent years groups of banks have also negotiated "stand-by agreements" with large concerns. In these agreements the banks definitely commit themselves to advance up to a specified sum during a specified period in return for a fee based on the unused portion of the commitment.

Banks have often made two requirements of customers to whom they extend a line of credit. First, the customer may be expected to maintain a deposit balance (called a *compensating balance*) bearing some relation to the amount he borrows or to the maximum amount of the line of credit. Thus, for example, the customer may be required to maintain an average deposit balance equal to 15 per-

cent of his borrowing or 10 percent of the maximum amount of the line of credit. A second requirement, commonly made by the bank in extending a line of credit, is that borrowers liquidate or *clean up* their indebtedness to the bank annually. This requirement is designed to indicate that a firm borrowing for seasonal needs has sold its goods and is able to retire its indebtedness. Borrowers engaged in nonseasonal industries often meet the "clean-up" requirement with the knowledge and consent of their banks by borrowing from one bank to pay another, without ever being out of debt to the banking system as a whole. Only the borrower's debt to the individual bank is extinguished.

There are two special classes of commercial loans. Banks discount for sellers with the latter's endorsement trade receivables consisting of promissory notes or trade acceptances given them by their customers. To an increasing extent, since the depression of the early 1930's, banks lend against accounts receivable due from customers. Banks also make commodity loans secured by documents which convey title to goods in transit or storage. The bank is concerned with the physical integrity of the collateral (including substitutions), its stability in value and marketability, the setting of a proper valuation for the collateral and a suitable margin for the advance, and its own legal position in relation both to the collateral and to the borrower. The loans are obviously confined to staples, especially agricultural products, in contrast to specialties.

We shall digress briefly to explain the V, VT, and T loans referred to in Table 24. During World War II the War Department, Navy Department, and Maritime Commission were authorized to enter into contracts with financing institutions to guarantee, in whole or in part, loans made by these institutions to contractors engaged in war production. V loans were designed to assist war contractors whose needs for funds were greater than would be obtainable under traditional financial standards. The VT loans provided for government guarantee of loans by private financial institutions to enable war contractors to obtain working capital for war production as well as to permit them the use of their working capital upon the termination of government contracts. The T loan provided government guarantee of loans by financial institutions to war contractors who needed interim financing pending payment of their claims by the government. With the accelerated mobilization program in the United States following the outbreak of hostilities in Korea in June 1950, the V loan program was revived.

TERM LOANS

Sometimes known as capital loans, term loans are business loans with a maturity of more than one year. Usually, the term loan provides for repayment in installments, either by a series of notes which come due at intervals or by a single note with a series of prescheduled payments.

Term lending is a recent commercial banking practice. In the past commercial banks were reluctant to grant loans for continuous working capital purposes or for financing acquisitions of plant and equipment. The banks objected to capital loans because (1) they could not be readily liquidated by sale and had to be kept to maturity, (2) the relatively long-term maturities made the loans more hazardous than a short-term loan where repayment could be required if the borrower's credit standing became impaired, and (3) bank examiners frequently criticized capital loans. After 1935, however, the banks' attitudes toward term loans changed largely because of their search for additional sources of earnings together with the decreased activity of demand deposits. Business concerns, on their part, had depleted their liquid funds in the depression years and wanting long-term funds found that their own earnings and the securities markets could not provide sufficient amounts.

Thus, in the later thirties term lending became an established feature of American banking. It is estimated that less than \$1 billion of these loans were outstanding at the end of 1937, and by 1940 the amount of term loans held by commercial banks exceeded \$2.1 billion. A survey of the member banks in 1946 attests to the growth of term lending; over \$4.5 billion or one third of all business loans of the banks were term loans.

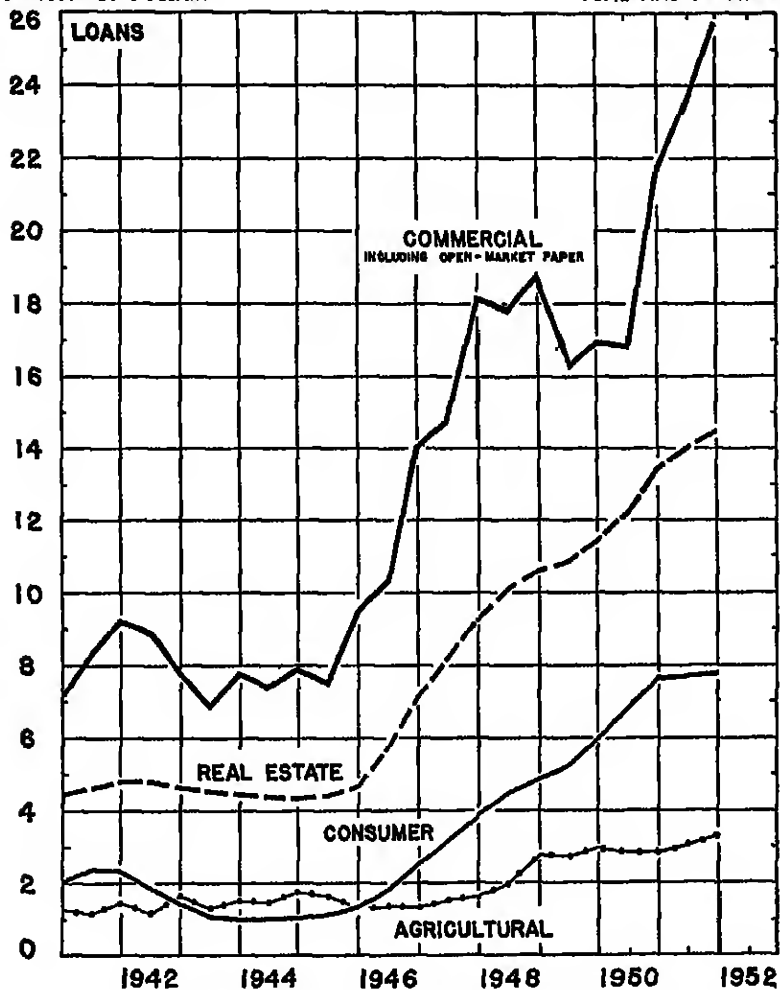
The banks have devised a regular pattern for term loans. Installment repayments are usually called for; over one half the amount of member bank term loans had maturities when granted of over 5 years with only a small fraction running over 10 years. An elaborate loan agreement, reminiscent of a corporate bond indenture, defines the duties of the debtor and the rights of the creditor, thereby permitting the bank to exercise more control over the debtor than would be true if it purchased a bond. For example, cash withdrawals from the business by the debtor are restricted, and the borrower may be required to apply earnings in excess of a stated figure to accelerated repayment of the debt. The bank's credit work is extensive, and it grants term loans to established concerns with a demonstrated earning power well in excess of the annual payments on account of both principal and interest. Thus, such loans are

FIGURE 14

CLASSIFICATION OF BANK LOANS OF INSURED COMMERCIAL BANKS

BILLIONS OF DOLLARS

JUNE AND DECEMBER



SOURCE. Board of Governors of the Federal Reserve System.

largely restricted by considerations of cost as well as safety to medium-sized and larger in contrast to smaller undertakings. Large banks are more active in extending term loans than are small banks, which ordinarily do not have the resources or facilities to manage these loans.

If an individual bank does not wish to undertake a term loan alone, it may syndicate the loan. Where the loan is syndicated, it is divided among a number of banks, each of which grants a prorated share of the loan to the borrower and receives its prorated share of repayments (and losses, if they should occur).

AGRICULTURAL LOANS

Farmers require short-term credit to meet seasonal and irregular needs just as do business firms. Normally, farmers depend on trade credit and bank loans for their short-term fund requirements, although a vast maze of government credit agencies or government-sponsored institutions have arisen which compete with the banks in supplying farmers with the funds they need.

LOANS FOR PURCHASING OR CARRYING SECURITIES

Commercial bank loans for purchasing or carrying securities consist of loans (1) to investment banking houses, (2) to brokers and dealers in securities, and (3) directly to individuals who wish to borrow part of the purchase price of securities.*

Investment banking houses in undertaking to float security issues for corporations and governments generally agree to pay the issuers immediately for all the securities at a stipulated price. The investment banking house may not have sufficient funds to finance its holding of securities in the process of being distributed into investors' hands. These houses will call upon large city banks to extend loans where the securities owned by the investment banking firm are used as collateral for the loan.

Individual investors or speculators may borrow either from their local banks or through brokers and dealers when they purchase securities on margin. When the brokers or dealers assume the responsibility of financing the customer's margin purchase, the brokers ordinarily will use their customers' securities as collateral for a broker's loan at the bank. On the other hand, an individual may borrow part of the purchase price of the securities from his local bank and will use the securities as collateral for his loan.

* Securities are also used as collateral for business loans and for consumer loans. Real estate is also employed as collateral for business and consumer loans.

The Securities and Exchange Act gave the Board of Governors of the Federal Reserve System control over margin requirements for brokers' loans and loans to individuals to finance security purchases. The term margin requirement refers to the proportion of the purchase price of the security listed on a national securities exchange which banks and brokers are not permitted to lend. Thus, the loan value of a security is the difference between its market value at the time of purchase and the margin requirement. If an individual wishes to purchase a security worth \$200 when the margin requirement is 50 percent, he would have to put up \$100 of his own money and he would be permitted to borrow the remaining \$100 of the purchase price from his broker or from his bank. At one time margin requirements were 100 percent; early in 1953 they were 50 percent.

When the margin becomes impaired, the loan or account becomes frozen, and the bank or broker is permitted to use his judgment as to calling for more margin or realizing on the collateral. In addition to regulating margins, the Federal Reserve Board of Governors is authorized to set a maximum percentage of individual member bank capital and surplus which may be represented by loans secured by stock and bond collateral, and it may direct a member bank to refrain from increasing its security loans for a period up to one year under penalty of suspension of its rediscount privileges if the bank does not heed the Board's warning.

REAL ESTATE LOANS

Real estate loans of commercial banks include loans to finance the purchase of land (usually improved) or to finance the construction of buildings or other improvements on the land. Real estate loans are the obligation of the borrower secured by a mortgage on the property. Within the last two decades the lump sum repayment method, formerly universal, has been supplanted largely by the amortized payment schedule, which combines interest and principal payments in a single uniform payment made monthly, quarterly, or in some instances annually. Federal Housing Administration (FHA) mortgages are obligations of the borrower, secured by a mortgage on the property, and insured by the FHA. Veterans' Administration (VA) mortgages are obligations of the debtor, secured by a mortgage, and guaranteed by the VA. Both FHA and VA mortgage loans call for regular amortization provisions.

As is evident from Table 23 (page 184), about three fourths of the banks' real estate loans are made on urban residential properties.

CONSUMER LOANS*

Consumer loans are a recent addition to commercial bank portfolios. Prior to 1930 consumer loans were made infrequently by banks, which preferred instead to lend money to consumer financing institutions which extended credit to consumers. The depression after 1929 and the sharp decline in the demand for commercial loans caused bankers to seek other outlets for their funds; consumer financing was one field which they entered. Consumer loans by banks take one of three forms: purchasing installment paper from retailers and finance companies; making direct cash loans to consumers which are repayable in a lump sum or in installments; and extending modernization loans under Title I of the Federal Housing Act.

Consumer loans are now an important part of commercial bank lending. At the end of 1951 about one fifth of the commercial bank loans were consumer loans. At the end of 1951 commercial banks held over half the retail automobile installment credit outstanding. In addition to direct financing of the consumer, commercial banks indirectly support about one half of all the consumer credit by loans to finance companies, department stores, and other retail units, which in turn extend credit or funds to consumers.

By executive order of the President the Board of Governors was empowered in August 1941 to regulate consumer credit. Consumer credit controls were administered by the Board through its Regulation W, which set minimum cash down payments in varying percentages of the purchase price of the durable good and also prescribed maximum maturities for consumer credit. The Board's power over consumer credit terminated in November 1947, was reinstated in September 1948, expired in June 1949, was restored in September 1950, and expired in June 1952. In addition to federal regulation, many states subject consumer loans to special legal provisions.

LOANS TO BANKS

Loans to banks are made mainly by banks in the larger centers to their correspondent institutions and were described briefly in Chapter 7.⁹

* See Chapter 31 on Consumer Credit.

⁹ See Chapter 7, p. 169.

■ OTHER ASSETS

On December 30, 1951, other assets (as distinct from cash and earning^a assets) accounted for \$2.2 billion out of a total of \$177.4 billion of assets of all insured commercial banks (Table 15, page 150). The largest component of other assets consisted of real estate amounting to \$1.3 billion. The main items of real estate are the buildings in which banks do business (part of which they may rent out) and their equipment. Unless approved by the Comptroller of Currency (for national banks) or the Board of Governors of the Federal Reserve System (for state member banks of the Reserve System), the investment in bank buildings cannot exceed the bank's capital. Other real estate owned by the bank and not used in the business is chiefly acquired by the bank on defaulted mortgages and is carried temporarily by the bank until it can be disposed of on favorable terms. National banks are required to dispose of property acquired by foreclosure within 5 years from the time of acquisition.

Customers' liability on acceptances outstanding refers to the liability of customers to reimburse the bank so that it has the funds to meet at maturity the time drafts drawn against it for the benefit of the customer. As explained in Chapter 7, customers' liability on acceptances outstanding is the *contra* item to the bank's own liability on acceptances outstanding. Included among other assets ~~are~~ such self-explanatory items as income accrued but not collected (the reverse of income collected but not earned) and prepaid expenses as, for example, insurance.

QUESTIONS AND PROBLEMS

1. Contrast the role of legal reserves and working reserves in maintaining bank liquidity.
2. a. Traditionally, "lending" implies permitting the use of funds on condition that they be returned whereas "investing" implies committing funds for the sake of income. Does this necessarily imply any difference in risk? Any difference between loans and investments as a basis for the creation of derivative deposits?
- b. Contrast loans and investments from the bank's point of view with reference to:
 - The initiative it takes in each case.
 - The relations with the debtor.
 - The share of the obligation it holds.
 - The maturity of the obligation.
 - Withdrawal of the resulting derivative deposit.

3. a. From the *Federal Reserve Bulletin* tabulate the present yields on the following issues of United States Government securities: 3 months' bills, 9-12 months' issues (certificates and selected notes), 3-5-year issues (notes and selected bonds), 7-9-year bonds, and bonds running 15 years or more. Also tabulate the yields on high-grade municipal bonds and on high-grade corporate bonds.
- b. Why buy a 3 months' bill instead of a 15-year United States Government bond? Why accept a lower yield on a high-grade municipal than on a 7-9-year United States Government bond? Is the differential between high-grade corporates and long-term United States Governments sufficient to make the former attractive?
4. a. Why would it normally be advisable for a business man to finance his peak seasonal needs by borrowing from the bank instead of taking the net terms offered by sellers of goods?
- b. Specifically, how do the terms of sale in an industry influence the form and maturity of bank loans?
- c. Would commodity collateral loans be useful to a department store? To a manufacturer who can set aside part of his premises as a "field warehouse" in which to keep a large stock of raw material?
5. "I think that a properly written term loan, carrying provisions for serial repayment, is superior as a bank asset to the continually renewed short-term instruments, the familiar 'sleeper' loans, through which banks heretofore have engaged in capital financing." (L. T. Crowley, *Banking*, December 1938, p. 76.)
- a. Explain why.
- b. Show how such loans reflect the abandonment in a 1938 revision of bank examination procedure by the federal supervisory authorities of the "slow" classification of loans and the recognition instead that loans should be considered in the light of inherent soundness.
- c. Do term loans help to provide small business with the kind of funds they need? Explain.
6. a. It has been said that the primary reason for the reduced need for bank loans has been the changed methods of financing working capital requirements of business. Explain.
- b. Why did the National Bank Act forbid national banks to lend against real estate? Why did the Federal Reserve Act of 1913 permit such loans?
- c. Why is real estate lending subject to more detailed regulation than any other type of bank lending? Analyze present restrictions on real estate lending by national banks.
7. Which of the following loan policies do you believe preferable and why? That of a bank which prides itself on having no losses during the past 20 years, or that of a bank which authorizes loan officers to lend up to a specified amount without committee approval but requires them to obtain such approval in every case in which a loan application is refused?

8. Indicate the amount of changes in the appropriate items in a national bank's statement that would arise from each of the following transactions:
- The bank discounts a 60-day promissory note for \$10,000 at 4 per cent. The borrower does not wish actual cash.
 - The bank buys \$10,000 of United States Government bonds at par with a cashier's check.
 - After default on an interest-bearing collateral loan of \$5,000 the borrower dies and upon sale of the collateral only \$3,000 is realized.

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CHAPTER 9

Portfolio Problems

IN CHAPTER 8 we considered the various forms that bank assets may take. A bank's portfolio represents a classified arrangement of its assets. Whether this portfolio is prepared wisely is of vital importance not only to the bank itself and to its stockholders but also to its depositors and to the general community. Since the amount, character, and distribution of its assets condition the bank's capacity to meet its liabilities as well as to extend credit and thereby meet the community's financing needs, the portfolio represents a problem of broad public interest.

A critical problem for bank managements as well as the monetary control authorities is the need for resolving the conflict between liquidity, solvency, and yield. A bank is liquid when it is able to exchange its assets for cash rapidly enough to meet the demands made upon it for cash payments. A bank is solvent when the realizable value of its assets is at least sufficient to cover all its liabilities. A commercial bank can satisfy the demands of its creditors and qualify its demand deposits as money if it is both liquid and solvent. Yield is important to the bank since it determines the profitability of the enterprise to its stockholders. As was noted in Chapter 7, retained earnings have been the most important source of additions to the net worth of the banks in recent years. Since net worth is the margin between solvency and insolvency, increases in net worth from retained earnings provide the bank with greater protection from insolvency. Moreover, the earnings of the banks measure the success with which these institutions can attract the resources they need for efficient operations both as private profit ventures and as an important segment of the monetary structure.

Why is there a conflict between liquidity, solvency, and yield? The largest fraction of bank liabilities is payable in cash. It should be clear, therefore, that cash is a prime bank asset. Any other use of its funds by a bank will not provide as great immediate liquidity and solvency as cash. Cash holdings, however, provide no income. Other investments of funds provide the bank with assets that can be quickly converted into cash with little chance of material loss; while these assets do increase the risk of loss and decrease liquidity as compared with cash, they provide the bank with interest income. Still other forms of investment, in which the best interest returns are normally available, increase the chance of loss both during the life of the instrument and at its maturity, and particularly if the asset must be sold (converted into cash) before maturity. In determining the proportions of various assets that it will hold, the individual bank must be mindful of its threefold obligation to its depositors, its stockholders, and the general public. A balanced portfolio combines various classes of assets so as to achieve the proper proportions of liquidity, solvency, and yield in view of the nature of the bank's liabilities and the character of its operations.

■ LIQUIDITY

While the appropriate degree of liquidity is a problem facing all individuals and enterprises, the maintenance of bank liquidity is important for several reasons. The great bulk of bank liabilities are payable in cash on demand or on short notice, yet by far the largest part of bank assets consists of debts payable only after a period of time. Moreover, the outstanding obligations of the banks to pay cash on demand exceed by far the amount of coin and paper money in existence. While the banks expect to be asked to pay out in cash only a limited fraction of their outstanding liabilities during any short period of time, this proportion varies from time to time. Without adequate provision for liquidity, the bank has no alternative but to close its doors if it is unable to pay its demand liabilities when called upon.

Looked at in terms of their liquidity, a bank's assets may be classified into the following categories:

- I. Primary reserves.
 1. Legal reserves.
 2. Working reserves.
 - a. Cash in vault.

- b. Interbank deposits (not part of legal reserves).
- c. Excess legal reserves.

II. Secondary reserves.

- 1. Prime open-market commercial paper.
- 2. Bankers' acceptances.
- 3. Call loans to stock exchange firms.
- 4. United States Government securities with maturities under 5 years.
- 5. State and municipal securities with maturities of 1 year or less.
- 6. High-grade, readily marketable corporate bonds nearing maturity.
- 7. Customers' paper eligible for rediscount with the Reserve banks.

III. Other loans and investments.

IV. Other assets.

PRIMARY RESERVES

The primary reserves of the banks are the cash assets referred to in Table 21, page 175. The primary reserves consist largely of the legal reserve account which is fixed by law at a minimum percentage of average deposits over a short period (weekly or semi-monthly), hence is only available to meet a fraction of the deposits withdrawn; since the legal reserve is established by the monetary authority, management cannot exercise any discretion over what the minimum legal reserve shall be. The remaining primary reserves are frequently described as working reserves, and the size of these balances is decided upon by the management. Working reserves are cash assets which the banks hold as a precaution against transfers of net deposits to other banks or net demands by depositors for cash.

The primary reserves of the banks whether required by law, or carried at the banker's own discretion, are designed to meet net withdrawals of cash as they arise from day to day. Since these reserves are normally meant to meet only immediate cash needs, it is necessary that banks be prepared to convert some of their earning assets into cash when the primary reserves fall below the level dictated by sound management or by law. Since primary reserves yield no income, carrying excess cash assets is an uneconomical measure, which causes the bank to sacrifice earnings by maintaining excessive liquidity.

SECONDARY RESERVES

In order to avoid carrying excessive cash assets while at the same time being prepared to convert some of their earning assets into cash to meet unforeseeable cash drains, banks purchase securities or paper that are both readily convertible into cash without loss and yield a moderate income. These assets are called secondary reserves, and their major function is to provide liquidity; income is generally regarded as of secondary importance.

While the concept of secondary reserves is very useful for analytical purposes, there is no universally agreed upon line of demarcation between secondary reserves and the remaining earning assets of a bank. Earning assets, composed of loans and investments, differ widely in degree of "moneyness" or prompt convertibility into cash (or primary reserves) without loss. For convenience, those readily so convertible, which are "near money," may be termed secondary reserves as distinct from other loans and investments.

Some of the bank's earning assets are immediately convertible into cash and clearly warrant inclusion among the secondary reserves. Call loans by banks to brokers may be terminated by either party, any day, on short notice and thus provide the bank with cash on its call. For assets which do not have immediate maturity, ready marketability is a prerequisite if the asset is to qualify as a component of secondary reserves. The concept of marketability as applied to secondary reserves assumes that such assets are readily salable with no appreciable loss. To qualify as secondary reserves securities must be short-term, since changes in interest rates cause more marked fluctuations in the market value of long-term obligation than in the market value of short-term obligations. Included with short-term securities are those which may have been issued a long while ago but are now nearing maturity.

Long-term securities may be readily marketable but, unlike short-term obligations, at times only with substantial loss. The reason for this is that the risk of fluctuations in the market value of the obligation reflects both the credit risk (change in the credit standing of the issuer) and the money risk (change in the level of market rates of interest).

In order to explain how changes in interest rates affect the market values of long- and short-term obligations, we shall contrast the position of the holder of short-term commercial paper with that of the holder of a long-term corporate bond. The holder of a \$10,000 note due in 4 months paid \$9,950 for it if the current rate of interest was $1\frac{1}{2}$ percent per annum; the discount of \$50 or $\frac{1}{2}$ of 1 percent

represents his return if the note is held to maturity. If, instead, he sold it at the end of 2 months and the market rate of interest remained unchanged at $1\frac{1}{2}$ percent, he would have earned half the discount or \$25 and could sell it for \$9,975. Now let us assume that at the end of 2 months the market rate of interest on this class of paper had risen to 2 percent per annum. A new purchaser would insist on a discount of \$33.33 or $\frac{1}{3}$ of 1 percent for holding the paper the two months to maturity so that he would pay only \$9,966.67 for the note. Thus, the original purchaser having held the paper for 2 months would receive only \$16.67 instead of \$25. He would have received his entire purchase price and his income thereon would merely have been reduced by $\frac{1}{3}$ (\$8.33) as a result of the increase of $\frac{1}{3}$ (from $1\frac{1}{2}$ to 2 percent) in the market rate of interest.

Now let us turn to the position of the holder of a \$10,000 corporate bond carrying a 3.5-percent coupon rate of interest (payable semiannually) and maturing in 20 years, which was purchased at face value. The purchaser may be regarded as having purchased an annuity for the time being of \$350 a year. Assume that at the end of 10 years the holder wishes to sell the bond and that the market rate of interest on this class of security has risen meanwhile to 4 percent. The opportunity of receiving \$350 each year might seem to be worth only \$8,750, since a comparable new investment of this sum would yield a 4-percent current return. It must be remembered, however, that at maturity 10 years hence the debtor is obligated to repay \$10,000. Thus, the purchaser of the bond for less than its face amount of \$10,000 would be receiving, in effect, each year in addition to the \$350 in interest, the discounted value of $\frac{1}{10}$ of the difference between the face amount payable at maturity and the lesser sum which he paid for the bond. Bond tables, based on a mathematically accurate computation show that the market price of the bond to yield 4 percent to maturity in 10 years would be \$9,591 (see Table 25). Thus, a purchaser paying this sum and holding the bond to maturity would earn a 4-percent return from the \$350 annual interest income and the \$409 more paid him at maturity when he received \$10,000.

The original purchaser of the 20-year bond, selling at the end of 10 years, would have lost a sum equal to over $\frac{1}{6}$ of the entire amount of interest he received over the 10 years as a result of the increase of $\frac{1}{4}$ (from 3.5 to 4 percent) in the market rate of interest. Moreover, in terms of principal his loss would have been 4.09 percent. The substantial loss would hardly make such a bond, regardless of its quality, a desirable secondary reserve.

We can generalize the relationship between the market price of

TABLE 25
CHANGES IN PRICE OF A 3.5-PERCENT BOND WITH DIFFERENT
MATURITIES AT VARIOUS MARKET RATES

Market rate, percent	Years to maturity			
	1	5	10	20
4.5	99.08	95.57	92.02	86.90
4	99.52	97.65	95.91	93.16
3.5	100.00	100.00	100.00	100.00
3	100.49	102.81	104.29	107.48
2.5	100.98	104.68	108.80	115.66

a bond and its length of time to maturity as follows: the market price of a bond at any one time reflects both the coupon rate and the maturity date, capitalized at the market rate of interest for the class of security. The shorter the maturity, as is evident from Table 25, the less the possible divergence between the face value and the market value. Therefore, the holder of a long-term obligation cannot count on being able to sell it at any time he desires without risk of loss.

The generalizations about the risks of loss associated with long-term bonds apply to long-term United States Governments as well as to corporate bonds if there is no intervention in the markets for these securities. In the postwar era the Federal Reserve authorities maintained the price of government bonds by support purchases to keep their prices from falling. In the latter part of 1947 the Reserve authorities decreased the support price, and in the spring of 1951 they restricted their purchases severely, thus permitting practically a free market for government bonds. On April 30, 1952, the bank eligible 2½'s due in September 1972 but callable in 1967, were quoted at 99.10,¹ to yield 2.54 percent to maturity. Issued at par in October 1941, they had risen as high as 109.18 on April 6, 1946, and had fallen as low as 96.15 on January 18, 1952. Again, on April 30, 1952, the bank restricted 2½'s due in December 1972 but callable in 1967, were quoted at 98.15, to yield 2.60 percent to maturity. Issued at par in December 1945, they had reached 106.16 on April 6, 1946, and had fallen as low as 95.22 on January 11, 1952.

There are varied opinions as to the propriety of including customers' loans eligible for rediscount with the Reserve bank as part of the banks' secondary reserves. Normally a bank is able to acquire

¹ This is the conventional notation, but should be read 99 and ten thirty seconds.

additional primary reserves through the process of rediscounting eligible paper or obtaining an advance secured by eligible paper from the Reserve bank. There are several arguments against including eligible paper among the secondary reserves. Customers' paper cannot be rediscounted without the member bank's endorsement. Thus, the bank cannot sell the paper outright as it can bonds, bankers' acceptances, and prime commercial paper. The endorsement entails a contingent liability on the part of the bank to make good the paper if it is not paid by the customer at maturity. Even if the paper is eligible, the Reserve bank is not legally obligated to lend or rediscount. Furthermore, since the Reserve banks can make an advance to a member bank on a note secured by any collateral (albeit at a rate $\frac{1}{2}$ percent or more above the rediscount rate), it might be argued that there is no need for any secondary reserve assets.

Regardless of the position that is taken in the above discussion, we must not lose sight of the fact that by tradition commercial banks in the United States are averse to borrowing from the central bank because of cost and concern over their credit position. For these reasons the accumulation of earning assets by banks has been, and will continue to be, influenced by a desire to meet depositors' requirements without resort to the Reserve banks, if possible. It should be clear, however, that the existence of a central bank which is prepared to increase the primary reserves of the banks by rediscounting and making advances as well as by engaging in open-market purchases and other measures, does reduce the secondary reserve requirements of the banking system to a large extent.

OTHER LOANS AND INVESTMENTS

The other loans and investments include all the remaining earning assets. They lack ready convertibility into cash (except as noted above) but yield substantially greater rates of return than do secondary reserves. The bank can arrange to space the maturities of its securities so as to provide an inflow of cash as these securities fall due from time to time.

OTHER ASSETS

The major component of other assets of the banks consists of facilitating assets such as the banking house and equipment. These facilitating assets are typically specialized in nature and lack convertibility into cash except at greatly reduced prices.

COMMERCIAL LOAN THEORY

The requirements of liquidity and solvency raise the fundamental problem of the appropriate form which bank assets should take. There is a long tradition in banking that commercial banks should confine themselves to making loans to customers, who would use the proceeds to increase their working capital to finance the purchasing, processing, and carrying of inventories of salable goods for the borrower's usual period of inventory turnover. These loans were described as self-liquidating since the sale of goods would provide the borrower with funds to repay the bank loan. The doctrine of self-liquidating loans is known by various names—the real-bills doctrine, the commercial loan theory, and the banking principle.

The real-bills doctrine, which assumes that commercial loans are liquid and other bank loans and investments are not, allegedly solves most of the monetary control problems of a nation. As long as banks make only self-liquidating loans, bank failures cannot take place, earning assets are liquid, and business is accommodated with the desired and appropriate amounts of funds. If the reserve position of the banks is strained, they can ask the central bank for "accommodation" in the form of rediscounts or loans on the collateral of the commercial banks' advances to business. Since commercial loans by the banks would more or less automatically expand and contract with the "needs" of business, it was assumed that the earning assets of both central banks and commercial banks would respond "elastically" to the "legitimate" demands for short-term business financing. The self-liquidating theory of bank assets was incorporated into the Federal Reserve Act in 1913. Under the original act the main purpose of the Federal Reserve System was to provide more adequate machinery for the commercial loan theory to function. In effect, the original Federal Reserve Act conceived of the central bank largely as a passive agent merely accommodating business as long as banks extended only self-liquidating loans to business.

Self-liquidating loans are not the secure liquid assets the real-bills doctrine would have us believe. While one bank can insist on repayment as loans fall due and can refuse to grant new loans, a large number of banks cannot simultaneously do so. The merchants who buy the goods the debtors sell ordinarily borrow to obtain funds with which to make purchases. Moreover, if debtors do not borrow again as their loans mature, they are likely to be forced to curtail their trading operations; they will reduce the sales of their suppliers and make the loans of the latter less self-liquidating. Thus, the

market for the borrowers' product depends largely upon new loans secured by purchasers, while the borrowers' own continued production and marketing (and hence purchases from their suppliers) depends heavily upon new loans that they secure. That is to say, the reduction of outstanding loans by some banks depends broadly on an expansion of loans by other banks so that a universal attempt to reduce outstanding loans would lead to the liquidation of business and large-scale default on bank loans, bank insolvency, and probably general depression.

In view of these facts many writers observed that an asset is liquid only if it is shiftable. An asset is said to be shiftable if its holder directly or indirectly can find a purchaser if he decides to part with it. Thus, shiftable may be said to depend normally upon an adequate organization of the financial markets. Some bank assets are made directly shiftable to other banks or their customers while other bank assets are made indirectly shiftable by providing new lenders to replace the old when paper matures. Only as new purchasers or lenders appear, can the old "bail out."

For the banking system as a whole the problem of liquidity takes a somewhat different form. If there is a widespread demand for cash, markets fall away, and investments prove no more directly shiftable than self-liquidating loans prove liquid. Then for the banking system as a whole there are only three sources for which cash can be obtained to meet a net cash withdrawal. First, cash may be withdrawn from the reserve accounts in the Federal Reserve bank to the extent that reserve requirements are reduced by the decrease in the deposits held by the banks. Since the reserve held is only a fraction of the deposit withdrawn, most of the drain must be met with additional cash that was not previously in the hands of the banking system. A second source of cash, therefore, is the issue of additional cash by the Federal Reserve banks or the Treasury. The third source of cash is the importation of gold from abroad.

Simply stated, the liquidity of the banking system as a whole depends largely upon the ability and willingness of the monetary authorities to issue new coin and paper money in exchange for assets purchased from or loans to the individual banks, secured by the banks' assets. In the Banking Act of 1933 and, to a much greater extent, in the Banking Act of 1935 the older philosophy of the basically passive nature of the central bank was changed to make the Federal Reserve System responsible for maintaining the liquidity of the banking system by providing cash when needed.

■ SOLVENCY

In the early days of banking in the United States banks were allowed a high degree of freedom in determining the types and proportions of assets they would acquire. In this period many abuses developed, and our financial history is characterized by a number of periods of unrestrained bank expansion followed by interludes of bank failures with resulting losses to depositors and holders of bank notes. In order to avoid the destabilizing effects of bank failures, both legal prescription and administrative regulation by supervisors have supplemented the judgment of the individual bank in achieving and maintaining solvency. This is done by laying down a framework within which the bank can exercise its discretion. The restrictions are of two kinds. Capital requirements for banks were discussed in Chapter 7. The other type of regulation relates to *the classes of assets that banks may acquire and hold.*

Restrictions on the types of assets that banks may acquire and hold can be conveniently summarized under the following five headings:

1. Certain classes of assets cannot be acquired. Banks are usually forbidden to hold common stocks other than stock in Federal Reserve banks, foreign banking corporations, and subsidiaries, such as safe deposit companies. They may temporarily acquire stock to prevent loss on existing loans, but they must dispose of the stock within a limited period. Finally, banks may also usually acquire real estate other than banking premises only to prevent loss on existing loans, and their investment in the bank building (including space rented to others) may also be limited.

2. The quality of bank assets is controlled to some extent by legislation and administrative actions of supervisors. Thus, national banks may not acquire bonds regarded as predominantly speculative by the principal rating agencies. An attempt has also been made to prevent banks from acquiring inadequately secured mortgages and highly questionable short-term paper.

3. Diversification of assets is required. The proportion of assets that may be held in certain forms is limited, notably in the case of loans on real estate and on stocks and bonds. In part, these restrictions reflect the thought that the volume of long-term assets should be related to the volume of long-term liabilities, such as time deposits and capital stock. Moreover, the amount that may be lent to any one borrower is commonly restricted, with certain exceptions, to 10 percent of a bank's capital and surplus, and the same restriction

applies to holdings of securities of any one obligor. Such limitations prevent the bank from "putting all its eggs in one basket," and they are also designed to curb favoritism in the granting of loans and thus to make bank lending facilities more readily available to prospective borrowers. It is noteworthy that the restrictions on loans to one borrower and the large number of small banks in our unit banking system have encouraged borrowers to keep accounts in the larger financial centers, have encouraged borrowing from more than one bank, and have also encouraged the flotation of commercial paper in the open money market through commercial paper dealers.

4. Limitations are placed on loans to stockholders, officers, and employees. Banks are forbidden to lend against their own shares, since this would in effect reduce their outstanding capital, and they can acquire and hold their own shares only temporarily to avoid loss on existing loans. In addition, a national bank may not lend one of its executive officers more than \$2,500, and then only with the approval of a majority of its entire board of directors.

5. For examination purposes securities of high quality are reported at their intrinsic value, not at their current market value.² The new regulations governing the evaluation of securities were instituted in 1938 and were designed to relieve banks of the danger of loss resulting from a decline in the capital value of high-grade bonds so long as they are not actually liquidated in the market. The 1938 regulations had previously been employed in time of crisis to avoid technical insolvency of institutions which experienced unrealized depreciation on securities they intended to hold. The evaluation procedure relieves banks of the danger of loss resulting from a fall in the market value of high-grade bonds so long as they are not liquidated in the market and so long as the banks have ample supplies of short-term securities to provide liquidity. Thus, the new regulations have the effect of encouraging banks to invest larger sums in high-grade bonds. The terms of the regulation permit banks to carry "approved bonds" (general market obligations rated within the first four groups by leading security rating services as well as unrated securities of equivalent value) at purchase price less equal annual amortization of premiums, if purchased above par. Substandard bonds not in default, if depreciated, have half the depreciation deducted in computing the bank's "net sound capital" position. All stocks and bonds in default are carried at their current market

² Security issues are required to be large enough and widely enough distributed to be readily marketable at their intrinsic value, or else their issuer must be able to cover interest and amortize 75 percent of principal by maturity. Note that this provision is not only designed to protect the solvency of the bank but is also intended to ensure the institution's liquidity.

value. Net depreciation on the latter two is classed as "loss," as is half the depreciation on the substandard bonds. The bank can ignore depreciation on the approved bonds.

In the same year (1938) the supervisory authorities established a uniform classification of loans. In 1949 the loan classification was altered, and present practice classifies bank loans into four groups. First are loans whose repayment appear certain regardless of maturity; second are "substandard" loans which require careful attention because of the degree of risk of nonpayment; third are loans whose collection is "doubtful," 50 percent of which must be written off in calculating the banks' "net sound capital"; fourth are loans which are considered "loss" and must be charged off entirely. The new method of classification permits banks to make loans which are not short-term or self-liquidating without fear of being judged insolvent by the examining body.

It may also be mentioned that national banks are restricted in the rate of interest charged on loans. They are limited to the greater of the rate permitted by the state in which located or 1 percent above the Federal Reserve discount rate on 90-day commercial paper. If the state has not set a legal maximum rate for bank loans, then the maximum is 7 percent. In addition, a national bank is permitted to make reasonable service charges for credit investigation, collection of installment payments, examination of titles, etc. The penalty for charging an excessive interest rate is forfeiture of the full interest or, if the bank's customer has already paid, the bank must return twice the amount of interest collected.

During the mid-thirties there was widespread complaint that the banks displayed such caution in their lending and investing as to deprive business, especially small business, of needed financial facilities. While this claim was not proved by several investigations, it points up the thought that the interest of the banks and the community may clash. Banks may lend as much as they can during periods of prosperity, when the demand for loans is relatively great and loans appear relatively safe. Conversely, banks may tend to reduce loans in periods of depression, when the demand for loans is falling and the risk in lending appears to mount. In the one case, the resulting increase in money in the form of deposits may be in excess of the community's needs, thereby producing inflation; in the other case, the decrease in the money supply may reduce spending, output, and prices still further, thereby aggravating the depression. Thus, some feel that commercial banks, left to themselves, tend to follow the tide of business and accentuate the expansion and contraction of economic activity.

In addition to central bank credit control measures discussed in Part III, one suggested remedy in depression is for government guarantee of loans or government participation in bearing part of the risk involved in loans. A substantial number of government agencies have been authorized to underwrite or guarantee loans by banks and other lenders to consumers, farmers, business firms, and other borrowers. By assuming part of the risk in lending the loan-guarantee program was designed to increase the volume of loans extended by lenders in depression when lending institutions were reluctant to undertake the risks involved in granting loans. In addition to loan guarantees, a number of government lending agencies were established in the depression, during World War II, and in the postwar years. These agencies obtain funds by issuing direct obligations of the federal government or obligations guaranteed by the government which are sold to the public, including banks, who desire high-grade investment securities. The lending agencies, in turn, use the funds to make loans. In one sense the direct lending or loan-guarantee programs are designed to maintain bank safety without sacrificing the availability of loans. The success of such plans, of course, depends on the wisdom displayed by the guaranteeing or lending agencies in demonstrating to private lending institutions the availability of sound loan opportunities.

■ BANK EARNINGS

The results of the management of bank portfolios are reflected in the profitability of bank operations as shown in Table 26 and Figure 15. Net profits after taxes serve as a barometer for both creditors and stockholders of the banks' success as going business concerns.

The banking business is characterized by a small margin of profit on a large volume of business. In 1951 despite total current operating earnings of 2.6 percent of total assets and 1 percent after deducting current operating expenses, the insured commercial banks were able to earn 7.8 percent on their net worth because they held about \$16 of total assets for every dollar of stockholders' investment. After adjusting for losses and recoveries on assets and deducting income taxes, net profits were 0.54 percent of the total assets. The net profits in 1951 were disposed of in two ways. About 46 percent were paid out as cash dividends and interest on borrowed funds while the remaining 54 percent of net earnings were retained in the business and added to the capital accounts.

TABLE 26

EARNINGS AND EXPENSES OF INSURED COMMERCIAL BANKS, 1951

	Millions of dollars ^a	Percent of current operating earnings	Percent of total assets
Total current operating earnings	\$4,395	100.0	2.60
Interest on U. S. Government obligations	\$ 984	22.4	
Interest on other securities	249	5.7	
Income and discount on loans ^b	2,425	55.2	
Service charge on deposit accounts	231	5.2	
Other current earnings	507	11.5	
Total current operating expenses	\$2,701	61.5	1.60
Salaries and wages	\$1,351	30.7	
Interest on deposits	385	8.8	
Other current expenses	965	22.0	
Net current operating earnings	\$1,694	38.5	1.00
Net charge-offs in excess of recoveries ^c	\$ 226		
Income taxes	559		
Net profits after taxes	908		.54
Cash dividends declared and interest paid on capital	419		
Net profits retained in capital accounts	489		

SOURCE: Federal Deposit Insurance Corporation.

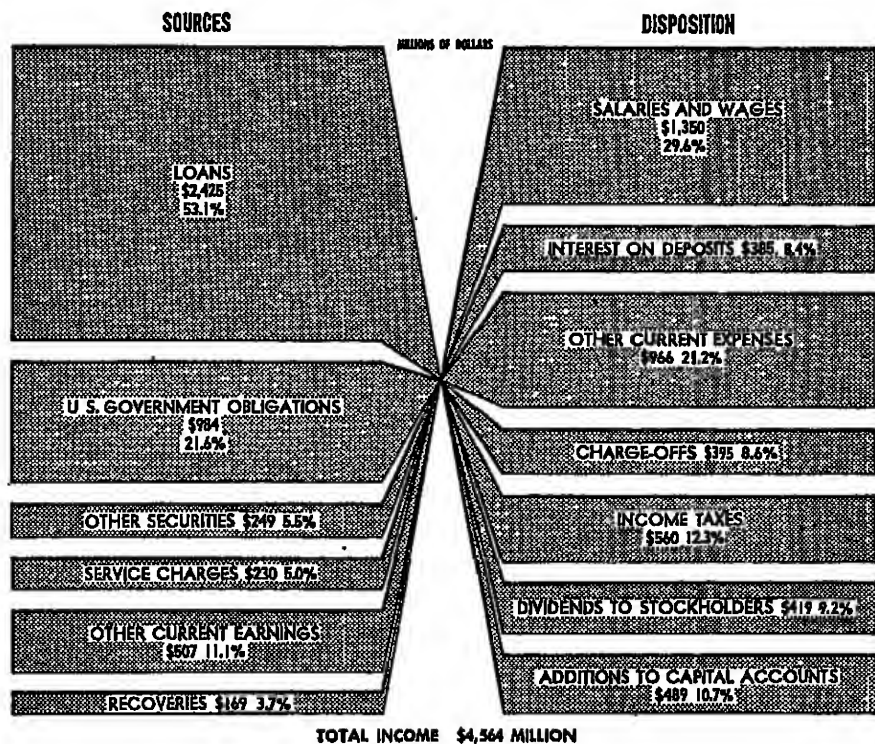
^a Components do not necessarily add to totals because of rounding.^b Interest and discount (\$2,390) plus service charges and other fees on loans (\$35).^c Details as follows:

	Recoveries, transfers from reserve ac- counts, and profits	Losses, charge-offs, and transfers to re- serve accounts
Total	169	396
Securities	84	115
Loans	51	225
All other	34	55

The relative size of the different kinds of insured commercial bank operating earnings and the various categories of costs incurred in making these earnings for the year 1951 are also shown in Table 26. The chief source of current operating earnings was income from loans; over half the current operating earnings were derived from

this source. Over one fourth of current operating earnings were produced from interest on securities, the bulk of which were United States Government securities. Income on loans provided more revenue to banks than did interest on securities despite the fact that

FIGURE 15
SOURCES AND DISPOSITION OF TOTAL INCOME OF INSURED
COMMERCIAL BANKS, 1951



SOURCE: Division of Research and Statistics, Federal Deposit Insurance Corporation.

56 percent of the earning assets consisted of securities. The greater contribution to current operating earnings from income on loans is explained by the higher average rate per annum of income obtained on loans (4.45 percent) than the average rate on securities (only 1.71 percent).

Total expenses of the insured commercial banks in 1951 were 62 percent of current operating earnings. Salaries and wages were the largest single item of operating expenses. Net earnings amounting to 38 percent of total earnings are not all net profits available

for distribution to the stockholder or for reinvestment in the business. Charge-offs for losses and reserves for bad debts must be deducted and recoveries on loans and investments previously charged off must be added.⁸ Income taxes must be deducted in order to ascertain net profits after taxes available for distribution by the board of directors.

QUESTIONS AND PROBLEMS

1. a. Distinguish between assets that are merely "liquid" from the point of view of the individual bank and those that are "liquid" from the point of view of the banking system as a whole. Give an example of each class of asset. What term may be applied instead to the former?
 - b. "A solvent bank need not necessarily be a liquid bank." Explain why, indicating how solvency and liquidity are measured.
2. Contrast the situation of the member banks of the Federal Reserve System today with their situation in 1929 with respect to:
 - a. Character of portfolio.
 - b. Reserve position.
 - c. Safety.
 - d. Profitability.
3. Do you believe the newer supervisory procedures represent an improvement over the former practices:
 - a. In respect to classification of bank loans.
 - b. In respect to evaluation of security holdings.
4. Comment on the suggestion that a particular bank's needs for secondary reserves be computed by adding the expected maximum fluctuations in deposits to the changes in local loans if they move in opposite directions, and subtracting the one from the other if they move in the same direction. (E. Hartzel, "The Measurement of a Bank's Secondary and Investment Reserves," *Journal of Business*, 1934, p. 344.)
5. "With banks holding large amounts of Government securities and the Federal Reserve ready to absorb them, it is not apparent how increased reserve requirements can reduce reserves available for loans." (J. M. Dodge, *Banking*, 1948, p. 124.) Explain. Have conditions changed since this statement was made? How?
6. "The commercial bank's business has two principal phases: receipt and disbursement of demand deposits and temporary advances to manufacturers and merchants. These two functions need not be connected at all, however, and there are economists who maintain that certain objectionable consequences flow from such a union." Do you agree with each of the latter two statements? Explain.

⁸ The practice of making additions to reserves was stimulated by the December 8, 1947, ruling of the Commissioner of Internal Revenue permitting banks to accumulate limited amounts of tax-free reserves for bad debt losses on loans based on 3 years' average loss experience over the preceding 20 years.

7. Could ordinary commercial business operate satisfactorily on the profit margins shown by commercial banks? Does this mean that commercial banks are necessarily less sound? Less profitable? Support your position by citing ratios between items in the bank statement and/or income account.

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CHAPTER 10

The Money Market. Commercial Financing Facilities

IN THE last chapter we saw that banks rely upon their secondary reserves to replenish their primary reserves. These secondary reserves are readily convertible into cash without loss. In recent years when commercial banks have had easy access to the central bank for additional primary reserves, emphasis upon the need for secondary reserves has not been as great as it was before central banking facilities were developed. If a central bank is willing to lend freely, the commercial bank may look to it to replenish its primary reserves in times of need. Such occasions would arise mainly when the community wished to convert deposits into currency. In the United States a member bank may rediscount with its district Reserve bank any eligible paper which it possesses; it may borrow for short periods on its own note secured by commercial paper or obligations of the federal government; moreover, it may borrow, at a slightly higher discount rate, on the security of any of its assets which are acceptable to the Reserve authorities. Prior to 1913, banks looked to their correspondent banks in the larger centers.

Regardless, however, of the facilities provided by the Federal Reserve System, there is a tradition among commercial banks in this country against borrowing continuously or heavily from the Reserve

banks.¹ Insofar as the prejudice against borrowing from the central bank does exist, most bankers would prefer to operate with their own resources so far as possible. Thus bankers would maintain sizable portfolios of secondary reserve assets which may be converted into primary reserves if that action is found necessary. Generally, secondary reserves comprise indirect or impersonal loans made in the open market by purchase of paper and securities offered for sale there. Included among short-term impersonal paper are bankers' acceptances, open-market commercial paper, brokers' loans, and the short-term obligations of governmental bodies. The obligations meet certain qualitative tests and are of more or less standardized types. Instead of there being direct contact between borrowers (sellers of paper) and lenders (buyers of paper), dealers or brokers link together the ultimate borrowers and lenders.

■ THE MONEY MARKET

Unfortunately there is no standardized, universally accepted definition of the term "money market." In its broadest sense, the money market denotes all the available facilities for borrowing and lending money. In this sense the money market includes the market for long-term as well as short-term borrowing or lending. Many writers prefer to refer to the market for long-term funds as the capital market and restrict the term money market to the market for short-term funds. In the more restricted sense the money market consists of two sectors: (1) the direct, or customers' loan market, distinguished by the close and personal connection between the borrowing customer and his bank and (2) the impersonal or "open" money market, characterized by objective relations between the borrower and lender where the loan is usually negotiated through middlemen and the lender and borrower do not meet. The term money market shall be used hereafter in a narrow sense, viz., the open money market.

The open money market is informally organized. For the most part, there is no formal meeting place at which the middlemen come together as in the buying and selling of securities on the stock exchanges. As in all free markets, there is a group of borrowers (providing demand for funds) competing among themselves for funds, a group of lenders (providing supply of funds) competing in the placement of funds, and a group of middlemen who provide facilities for bringing together the bids and offers of the borrowers and

¹ W. R. Burgess, *The Reserve Banks and the Money Market*, 2d ed. (New York, 1916), pp. 219-20.

lenders. The negotiations are carried on in the offices of brokers, dealers, and banks with the use of the telephone, telegraph, and mail.

To those with short-term funds, the money market provides a temporary outlet; to those seeking funds, it provides a source of supply. Through it funds are made mobile. Both debtors and creditors obtain access to a broader market organized on a regional and in some markets, on a national or international scale. The relatively high degree of competition on both sides results in uniform prices that reflect underlying economic forces for identical obligations. Through the market, too, individual banks are enabled to adjust their reserve positions. Banks purchase paper arising in the money market because of its high quality and because it provides a means of diversifying loan portfolios. They sell paper in the market as circumstances arise which require banks to add to their cash.

The money market is not a single simple market but is a family of closely related markets, each having an individuality of its own. The bankers' acceptance and commercial paper markets provide specialized commercial financing facilities to finance foreign and domestic trade. The call and time money market facilitates the flotation of new issues and trading in existing securities. Each of these markets has as a counterpart direct financing for their customers by commercial banks. The United States Government securities market, ranging all the way from Treasury bills to long-term bonds but confined for the present purpose to issues maturing in not over 5 years, helps finance the deficits of the government. The market for "federal funds" provides facilities to enable banks with reserve deficiencies to acquire temporarily needed reserves.

Prior to 1913 the call-loan and commercial paper markets were the most important sectors of the money market and during the 1920's the call-loan and acceptance markets predominated. Since 1929 the United States Government securities market has far overshadowed all others, as is evident from Table 27.

INTEREST RATES IN THE MONEY MARKET

The markets that comprise the open money market are closely interrelated so that conditions in one market affect the others. The broad competition that exists tends to set, at any one time, a pattern of rates between the different classes of paper and securities in the various money markets as well as between them and loans by banks to customers. In general, the rate differentials noted in Table 28 are based more on differences in demand than in supply, since all the open money markets draw heavily on one

TABLE 27

MONEY MARKET SECURITIES OUTSTANDING IN SELECTED YEARS

(000,000 omitted)

Year	Bankers' acceptances	Commercial paper	Brokers' ^a loans	Treasury bills	Treasury certificates	Treasury notes
1929	\$1,782	\$384	\$8,990	\$ 100	\$ 1,306	\$ 1,885
1933	764	109	845	1,003	1,628	4,880
1941	194	375	389	2,002	.....	5,997
1945	154	159	795	17,037	38,155	22,967
1951 ^b	490	434	695	18,102	29,078	18,409

SOURCE: *Banking and Monetary Statistics*, pp. 465-67, 500, 509-10, and *Federal Reserve Bulletin*.

^a Brokers borrowing on collateral in New York City, 1929-1941; borrowings from banks in New York City and elsewhere as well as from other lenders (not including members of national securities exchanges) 1915, 1951.

^b Whereas insured commercial banks held almost all the first three forms, at the end of 1951 they held only \$7,219 million of Treasury bills, \$7,526 million of certificates, and \$11,256 million of notes. Federal Reserve banks held \$596 million of bills, \$12,793 million of certificates and \$5,068 million of notes.

TABLE 28

INTEREST RATES ON MONEY MARKET SECURITIES IN SELECTED YEARS

(Average percent rates per annum)

Year	Prime bankers' acceptances, 90 days	Prime commercial paper, 4-6 months	Stock exchange call loans, renewals	Treasury bills, 3 months	Treasury issues, 9-12 months	Treasury issues, 3-5 years
1929	5.03	5.85	7.61			
1933	.63	1.73	1.16	.515		2.66
1941	.44	.54	1.00	.103		.73
1945	.44	.75	1.00	.375	.81	1.18
1951	1.60	2.17	2.17	1.552	1.73	1.93

SOURCE: *Banking and Monetary Statistics*, pp. 448, 460, and *Federal Reserve Bulletin*.

common source of supply, namely, the commercial banks. The rate differentials are explained not only by the degree of risk and differences in maturity of the paper and securities, but also by differences in terms of loan contracts, legal restrictions, liquidity of various types of paper and other factors. As is also evident in Table 28 and Figure 16, there are not only differentials in rates at a given moment of time but also the whole structure of rates may change from time to time. The level of rates in every classification of money market paper manifested wide changes over the last two decades.

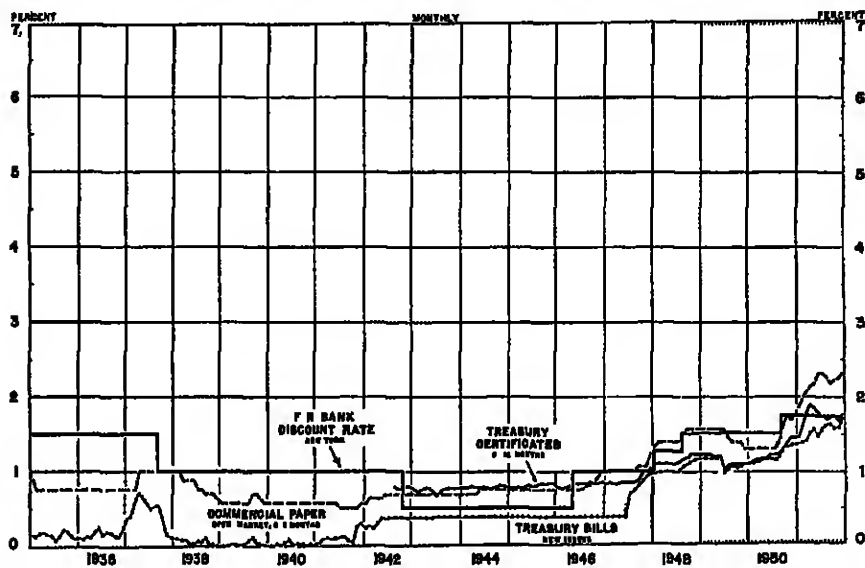
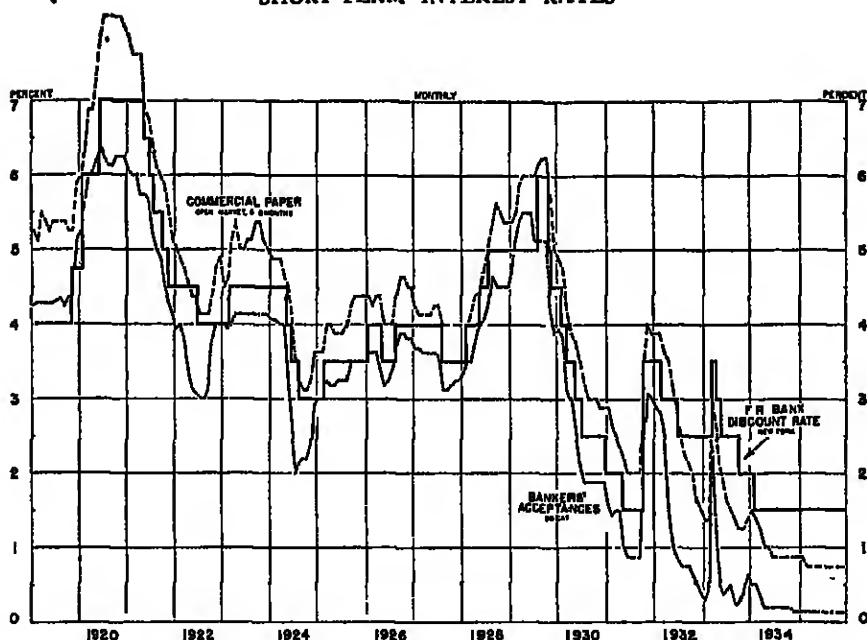
A brief discussion of the market for federal funds will be followed by a description of the principal money markets.

■ FEDERAL FUNDS MARKET

Federal funds are deposits with the Reserve banks or checks drawn on either the Reserve banks or the Treasurer of the United States. Developed during the 1920's when excess reserves of the banking system were negligible, the federal funds market dwindled in importance as member banks accumulated large excess reserves during the early 1930's. Essentially federal funds are a means of providing legal reserves on a temporary basis by banks or others with excess balances to banks with legal reserve deficiencies. The operations are fairly simple. A borrowing bank receives a check on the Reserve bank or on the Treasurer of the United States and in return gives its own cashier's check with agreed-upon interest for 1 day. The borrowing bank's account with the Reserve bank is credited immediately, while its check is cleared the following day. Thus, the bank with a reserve deficiency acquires reserves for 24 hours for which it pays interest for 1 day's loan. The transaction amounts to a trade of checks (on the Federal Reserve bank or Treasury) payable today for checks (on a member bank) payable tomorrow and carrying interest for that 1 day.

Federal funds are usually traded in million-dollar units and the rate of interest at which funds are dealt in is largely determined by the rediscount rate at the Reserve bank. If reserves are tight, the federal fund rate goes above the rediscount rate, and if reserves are plentiful, the federal fund rate goes below the rediscount rate. The principal suppliers as well as users of federal funds are the member banks. The borrowing bank obtains a temporary advance which enables it to adjust its portfolio while the lending bank earns interest on its balances with the Reserve bank which are nonearning assets.

FIGURE 16
SHORT-TERM INTEREST RATES



SOURCE: Board of Governors of the Federal Reserve System.

■ BROKERS' LOAN MARKET²

The short-term paper originating in the negotiation of collateral call and time loans by brokers provides banks with secondary reserve assets. While far less than in the 1920's, brokers' loans still provide a substantial outlet for short-term funds of the banks (Table 27). There are two standard types of brokers' loans: call (demand) loans and time loans. A call loan may be repaid by the broker or called by the lender at any time following the day on which the loan is extended. A time loan is extended for a definite period, and at maturity it is either repaid or renewed. Apart from differences in maturity, call and time loans are similar. The proceeds are used to finance security purchases and the terms of the collateral loan agreements are essentially alike.

The brokers' loan market represents one part of the security loan field, which includes loans to customers secured by stocks and bonds. An individual wishing to purchase securities without paying the full price may negotiate a loan directly with his bank, leaving the stocks and bonds as security or he may go to his broker, put up a sum of money in partial payment and rely upon the broker to borrow the funds necessary to make up the balance. The reader will recall from Table 23 (page 184), that the insured commercial banks' loans to brokers and dealers at the end of 1951 were \$1,571 million compared with security loans to individuals and others amounting to \$961 million.

Brokers borrow at times to purchase securities for their own account. Dealers also carry securities they have underwritten but have not yet distributed to investors. The major demand for brokers' loans arises from the need to finance customers' purchases of securities on margin. When a broker buys securities for customers who trade on margin, he retains possession of them until they are fully paid for. With the customer's written permission, he may pledge the securities as collateral in obtaining loans from the banks. The value of the securities pledged must exceed the amount of the loan by an amount not less than that set by the margin requirements issued by the Federal Reserve System. The lending bank may sell the collateral security at any time without notice to the borrower if the latter fails to pay any debts coming due or fails to furnish additional collateral when called upon to make up a deficiency in the pledged security because of a price decline. Substitutions of collateral are permitted by lending banks.

² Brokers' loans are also discussed in Chapters 8 and 28.

During the 1920's the money desk on the floor of the New York Stock Exchange was widely used in arranging call loans. Brokers listed their credit needs with the desk clerk, and banks listed the amount of funds which they wished to lend. With this information the desk clerk brought borrowers and lenders together; all other details were left to the lender and borrower. Brokers' loans were also arranged by money brokers who for a fee, usually paid by the borrower, arranged to bring borrower and lender together. The money desk was discontinued in 1946, and since the 1930's practically all brokers' loans are arranged on a customer basis with the bank or banks at which brokers maintain deposit accounts. To the bank, therefore, brokers' loans are a part of normal lending business instead of representing employment of excess funds or a first means of obtaining funds from the money market to replenish working reserves. In practice, loans are rarely called at the present time.

In recent years commercial banks have been virtually the only lenders in the brokers' loan market. In times past, however, nonbank lenders were an important source of funds in this market. The Banking Act of 1933 prohibited member banks from acting as agents in the placement of brokers' loans for nonbank interests. In 1934 the Securities Exchange Act provided that brokers doing business on a registered exchange may borrow only from a member bank or a nonmember bank which agrees to comply with all federal laws and regulations that apply to transactions in securities.

The brokers' loan market traditionally provided a major facility for the adjustment of the reserve position of banks before the 1930's. While a bank with brokers' loans outstanding is likely to regard them as excellent secondary reserves since they can be converted into cash at will, there is no assurance that for the banking system as a whole brokers' loans will be liquid. Since brokers have no independent source of funds other than banks, when one bank calls its loans the brokers expect to be able to borrow from other banks. If all banks call their loans in a critical period, the entire market tends to become frozen, and security prices tend to decline.

■ THE GOVERNMENT SECURITIES MARKET

The United States Government securities market, which dwarfs all others, is mainly the heritage of World War II. In order to raise the funds which it needs, the government issues many kinds of securities designed to tap various sectors of the investment market. The debt instruments are issued in a variety of maturities measured in days or a long term of years, at varying prices or

yields. Some of the issues are marketable, while others are nonmarketable, that is, cannot be sold but can be redeemed with the Treasury. There are also special issues of the Treasury which are issued only to government agencies and trust funds. In addition, there are issues of federal agencies which are guaranteed as to principal and interest by the Treasury.

Into the market for United States Government securities, both short- and long-term, are continually flowing offerings by the Treasury as well as offerings by existing holders of government marketable debts. This supply is absorbed by a variety of investors. Financial and nonfinancial institutions and individuals in the United States hold government debt; foreign banks, governments, and individuals also are represented among the owners of federal securities.

DEALERS IN GOVERNMENT SECURITIES

Dealers in government securities handle the major share of the trading in those issues by serving as intermediaries between those who wish to sell and those who wish to buy. They maintain close contact with large investors to know where large blocks of governments might be placed if offered for sale or where some might be purchased if a customer wishes to buy.

In their capacity as intermediaries dealers act by and large as principals. They buy and sell for their own account, and their profits are derived from the margin between purchase and sale prices. Often the dealers will purchase blocks of governments before they locate purchasers or will sell securities they do not actually own. In order to finance their operations, dealers in governments supplement their own capital by borrowing extensively from commercial banks on narrow margins against government securities as collateral. They may also borrow securities temporarily from large commercial banks that specialize in providing the service, and they are thereby able to sell and deliver almost any Treasury issue, regardless of whether they happen to own some themselves. Watching developments in the market closely, they adjust their inventories in accordance with their judgment as to the future course of market prices, and are constantly alert to buy and sell issues whose prices get "out of line" in relation to other issues. In order to protect themselves, dealers engage in hedging operations. By selling a comparable issue when making a purchase, they help to minimize fluctuations in prices, thereby stabilizing the government bond market.

The bulk of the trading in governments is done in blocks of \$1 million or more. Most substantial investors buy from and sell

directly to dealers. Large investors frequently "shop around" among dealers for the most advantageous price, while commercial banks usually spread their transactions among different dealers in proportion to the amount of business received from each by way of loan and deposit balances. Almost all transactions are executed by telephone.

The major share of the transactions in government securities are effected by several dozen dealers, most of whom have headquarters in New York. The larger dealers also operate branches in leading centers throughout the country. The number of dealers has increased greatly as the volume of trading in government securities increased after 1932. Some are older firms with a background in investment banking or acceptances, but others are new concerns organized primarily to deal in governments. A number of commercial banks maintain special departments to act as dealers in transacting business in government securities.

COMMERCIAL BANKS AND GOVERNMENT SECURITIES

The short-term paper issued by the federal government is generally recognized as excellent for secondary reserves for the commercial banks. The Treasury bills, certificates, and notes, all having a maturity of 5 years or less, are of the highest quality as far as safety since there is full assurance that they will be redeemed at maturity. Moreover, these instruments can be resold readily before maturity and can be used by banks as collateral in borrowing from the Reserve banks. Despite the longer maturity of Treasury notes, they are widely employed as secondary reserves since they can be readily resold or used as collateral in borrowing from the Reserve banks.

The commercial banks and the Federal Reserve banks are important operators in the market for short- and medium-term government issues. Commercial banks are constantly having holdings of government obligations redeemed. To the sums so made available for reinvestment are added those arising from portfolio changes undertaken to realize profits, increase income, and strengthen their short-term position. Since 1941 most large banks have used the market for short-term governments (maturing in 1 year or less) to adjust their reserve positions.

The Federal Reserve banks participate in the government securities market in two principal ways: (1) they receive subscriptions for new offerings by the Treasury, perhaps after "preparing the market," and (2) they stand in the background to ensure an "orderly market."

They provide support by absorbing securities which the market will not take at existing levels or, conversely, provide restraint by selling out part of their holdings. Perhaps most conspicuous was the peg of the short-term bill rate at $\frac{3}{8}$ of 1 percent during World War II and through the middle of 1947 by standing ready to buy at that figure all bills offered to them. The Federal Reserve Bank of New York watches the market closely and continuously. Technically, the Reserve banks buy bills direct from the banks but in the case of certificates, they operate through dealers. They deal only with a group of "recognized dealers," composed of leading dealers who agree to certain terms in connection with the conduct of their business.

■ THE BANKERS' ACCEPTANCE MARKET

A banker's acceptance, as we have already seen, is a draft drawn by an individual or firm against a bank payable at some future date which is "accepted" by the bank on which it is drawn upon presentation. The acceptance has the effect of binding the acceptor to pay the draft when due. When the accepting bank is well known and enjoys a good credit standing, its acceptance is considered prime paper and is sought after by banks as secondary reserve and by others who desire a liquid and sound investment. Although the accepting bank is the creator of the acceptance, it is neither the lender nor the borrower. The actual borrower is the person or firm who arranges to have the bank lend its good name to the bill. The lender is the person or institution in the acceptance market who buys the acceptance.

Unlike the commercial paper market and the brokers' loan market which are indigenous to the United States, the bankers' acceptance market represents a financing technique developed abroad, especially in London. It was consciously created in this country as a part of the banking reform program instituted when the Federal Reserve System was established in 1914. The decision to develop a bankers' acceptance market stemmed from the following reasons: (1) to make the United States a leading international trading nation, it was deemed necessary to develop an important financial market in the country also; (2) to enable banks in this country to earn commissions previously collected by bankers in London and other financial centers; (3) to provide short-term, liquid securities superior to brokers' loans for investment of secondary reserves; and (4) to provide aid to the Federal Reserve authorities in controlling credit.

The money market was to be reorganized and patterned on foreign models, centered around the banker's acceptance.

Since national banks were not permitted to accept time drafts under the National Bank Act, these banks were granted power by the Federal Reserve Act of 1913, to accept time drafts, subject to promulgations by the Board.* In order to foster their use, acceptances were made eligible for rediscount as well as for purchase by the Federal Reserve banks under their open-market powers.

CLASSES OF BANKERS' ACCEPTANCES

American acceptance practice evolved over the years. The volume of acceptances outstanding at the end of 1951, classified on the basis of underlying transaction as well as by holder, is shown in Table 29 (page 228). It will be observed that there are four classes of underlying transactions giving rise to acceptances. They will be examined briefly.

1. An acceptance for financing imports into the United States originates in the request of an importer to his bank for a letter of credit. The letter sent to the exporter in a foreign country authorizes him to draw a draft on the bank payable at some future time as called for in the terms of sale of the goods. The bank, issuing the letter of credit, agrees to accept and eventually to pay the draft if it is drawn and accompanied by the bill of lading and other shipping documents showing that the goods have been shipped. When the exporter draws a draft under the letter of credit, he either discounts it with his bank or delivers it to the bank for collection. In either event, the draft (and accompanying documents) is forwarded to an American correspondent of the foreign bank and is offered for presentment and acceptance. The draft may then be discounted in the United States money market or held until maturity for the benefit of the exporter or his bank. The importer may obtain the documents and possession of the goods either upon his own reputation or in exchange for a trust receipt which gives the bank title to the goods although they are in possession of the importer.

2. An acceptance to finance exports from the United States resembles one arising from imports into this country, except that the request for the letter of credit comes from the foreign buyer or his bank. The United States exporter is permitted to draw a draft on the United States bank issuing the letter of credit, to have the draft accepted, and to discount it in the money market. Thus, the accept-

* Then known as the Federal Reserve Board.

TABLE 29

DOLLAR ACCEPTANCES OUTSTANDING, DECEMBER 31, 1951

(000,000 omitted)

Based on		Held by	
Imports into United States	\$235	Accepting banks—total	\$197
Exports from United States	133	Own bills	119
Dollar exchange	23	Bills bought	79
Goods stored in or shipped between points in:		Others	293
United States	55		
Foreign countries	44		
Total	\$490	Total	\$490

SOURCE: *Federal Reserve Bulletin*.

ing bank aids the foreign purchaser to buy goods in the United States on favorable credit terms.

3. Acceptances to create dollar exchange are designed to meet the dollar needs of countries, notably Central and South American nations, which have seasonal or irregular exports. The foreign banks draw clean time bills on their American correspondents, which are accepted by the latter and sold in the United States money market. The proceeds are credited to the accounts of the foreign bank, which proceeds to sell dollars to its customers who find it necessary to remit dollars in payment of debts to persons in the United States. Subsequent exports to the United States provide funds which the drawer places in the hands of the acceptor to meet the acceptances at maturity.

4. Acceptances to finance the shipment and storage of goods in the United States or in foreign countries arise when the owner of goods arranges with a bank for the latter to accept a time draft drawn against it, secured by documents of title representing the goods. The documents may be held or released by the accepting bank. The drawer of the accepted draft discounts it in the acceptance market. Thus the firm obtains funds at the relatively low rate of discount at which a good banker's acceptance may be sold in the money market. The advantage of the acceptance to the firm lies in the possibility of getting funds more cheaply than by paying the customer's rate at the borrower's own bank. Subsequent to 1934, the rise in the bankers' acceptance rate and the decline in customers' loan rates at the banks have discouraged the use of bankers' accept-

ances because of the elimination of the spread between these two rates.

The regulations governing the acceptance of drafts by member banks fall under four main heads: (1) restrictions on the purpose for which the acceptance may be created; (2) restrictions on the security required at the time of acceptance; (3) restrictions on the extent of use of the acceptance power, both in the aggregate and for one interest; (4) restrictions on the maturity of the acceptance. Acceptance powers under the Federal Reserve Act are summarized in Table 30.

ACCEPTANCE DEALERS

The market for acceptances has been highly concentrated. As is evident from Table 29, accepting banks provided the market for somewhat less than half the total of outstanding acceptances, thus acting as both acceptors and suppliers of funds. The balance of the acceptances is held by other banks and, at times, by nonbanking organizations (insurance companies, endowed institutions, etc.), foreign central and commercial banks as well as the Federal Reserve banks. Today, acceptors consist largely of a few leading institutions in New York and, to a lesser extent in other large, eastern cities. There is only one active market—New York—although at times in the past other centers such as Boston and San Francisco have shared the business. Without the support of the Federal Reserve banks, a bankers' acceptance market could scarcely have developed in this country. Between 1916 and 1924 they bought an average of 45 percent of all bills outstanding. As a matter of policy they posted buying rates at which they stood ready to purchase all the prime bankers' acceptances offered to them. By providing a market in which holders of acceptances could always dispose of them the Reserve authorities tried to encourage the use of bankers' acceptances. Moreover, since the posted buying rate in the twenties was usually below the rate charged to member banks on rediscounts and advances, the acceptance market was especially favored. The Reserve banks have purchased acceptances both for their own account and for the account of foreign banks. Reserve bank purchases since the early 1930's have been small; with large amounts of excess reserves, the city banks bid strongly for the limited supply of acceptances and pushed the rate of discount below (the price above) the Reserve bank buying rates (prices).

In general, many banks hesitate to purchase bills in periods of active demand for loans because of the low returns on these bills.

TABLE 30

ACCEPTANCE POWERS UNDER THE FEDERAL RESERVE ACT

Nature of underlying transaction	Security required at time of acceptance	Rate percent of unimpaired capital and surplus which may be accepted		Maturity of acceptances exclusive of days of grace
		For any one interest	In the aggregate	
1. Importation or exportation	None	10, unless acceptor is and remains secured by attached documents	50, on application to the Board, banks with surplus accounts equal to 20 percent of capital may accept up to 100; but aggregate amount of acceptances arising out of domestic transactions must not exceed 50	6 months
2. Storage of readily marketable staples	Warehouse receipt or other such document conveying or securing title ^a	or some other actual security growing out of the same transaction as the acceptance		
3. Domestic shipments	Shipping documents conveying or securing title			
4. Dollar exchange		10, unless acceptor is and remains secured by documents conveying or securing title or some other adequate security	50, distinct from limitation above	3 months

NOTE: Form of table follows B. H. Beckhart, *The New York Money Market* (New York, 1932), Vol. III, p. 272, and *Discount Policy of the Federal Reserve System* (New York, 1924), p. 163.

^a Federal Reserve banks may neither discount nor purchase bills arising out of the storage of readily marketable staples unless the acceptor remains secured throughout the life of the bill.

When there is slackened demand for bank loans, the banks bid eagerly for the limited supply of bankers' acceptances. The small group of accepting banks hold a large fraction of the outstanding acceptances. Moreover, in attempting to keep their funds in earning assets and to avoid paying the dealer's commission, many accepting banks buy heavily of their own acceptances instead of permitting them to be sold in the open market. It should be clear that when a bank retains its own acceptances, it is, in effect, granting a loan to the firm which arranges the acceptance and the bill is not open-market paper. The practice of a bank holding its own bills has been objected to because it precludes any market evaluation of the bank's acceptances, and by reducing the available supply of bills, it narrows the scope of the market for dealers and for purchasing banks.

The dealers in bankers' acceptances make the market by bringing together the bids of buyers and the offers of sellers of acceptances. The accepting institutions create the supply of bills and purchasers provide the demand. The dealers perform the function of intermediaries by purchasing acceptances at a discount and reselling them as rapidly as possible at a lower rate (higher price) than they paid for them. Dealers seek their profit by rapid turnover rather than from holding the acceptances to maturity. They obtain bills from acceptors, from drawers or their banks, and from other holders. If requested, the dealer endorses the bills he sells. This guarantee adds to the credit standing of the bill which will therefore sell at a lower rate (higher price). The Reserve banks require endorsement of a dealer "recognized" for size, financial strength and management, unless the acceptance already bears a satisfactory bank endorsement.

Acceptance dealers, mainly located in New York City, are few in number; they also handle other securities, especially United States Governments. Since their own capital is small in relation to their operations, acceptance dealers borrow heavily to finance their portfolios of bills pending sale. These funds are borrowed from commercial banks or the Reserve banks, depending on which offers the better terms. Since the late twenties bank borrowing has been the major source of funds. In the twenties, the Reserve banks financed dealers' requirements for the most part on a resale agreement in which the dealer undertook to repurchase at face value within a stated time the bills he sold the Reserve banks.

OPERATION

The commercial paper dealer mainly buys and sells the promissory notes of large business concerns. The business currently is highly concentrated; in 1951 the paper of the 398 concerns that borrowed in this manner was handled by less than a dozen dealers, and half of the total by a single house. At the close of 1951 dealers reported \$434 million of commercial paper outstanding. In addition, the "big three" sales finance companies who place their promissory notes directly with banks with which they keep deposits as well as with nondepository banks had twice as much paper outstanding as had been handled by dealers.

The modern commercial paper house and market are the product of a gradual development extending over a century and a half. A century ago, the commercial paper house acted as a mere note broker. Today, the commercial paper house acts as a dealer or merchant, buying paper outright at a flat rate of discount and reselling it, without its endorsement, as rapidly as possible. For its service, the house receives a normal "commission" of $\frac{1}{4}$ of 1 percent, irrespective of the maturity of the paper. Thus, when it buys at the current market rate of $1\frac{1}{2}$ percent per annum, \$1 million of notes maturing in 6 months, it pays the borrower the face amount less \$7,500 discount and \$2,500 commission. If it sells the paper on the day of purchase, it will retain only the commission. The greater the delay in sale, the larger the share of the discount it also retains.

Commercial paper houses obtain funds from their own capital and by borrowing from commercial banks. The total amount of funds required varies with their inventory of purchased notes which, in turn, depends on the relation between the volume of purchases and sales. Loans are usually secured in the leading financial cities where dealers' deposits are maintained and interest costs are lowest. Typically, borrowings from the commercial banks are secured against either commercial paper or securities as collateral.

Commercial paper has an average maturity of 5 months and seldom exceeds 6 months. It is ordinarily issued in standard denominations ranging from \$5,000 to \$50,000. About 97 percent of the paper consists of straight notes (made payable by the borrowing concern to itself and endorsed by it in blank). The remainder has been given additional security by endorsement, guarantee or the pledge of collateral. A large part of the paper secured by collateral is accounted for by sales finance companies whose notes are usually secured by the notes receivable from their customers. The paper is issued for current financing purposes, but is frequently "renewed"

by having the dealer sell a new batch of notes, and the general "rule of thumb" is that the borrower shall maintain open lines of credit at his depository banks equal to his outstanding commercial paper. The commercial paper house does not assume a direct liability by endorsing the paper it sells. However, it cannot afford to sell inferior paper and therefore maintains elaborate files and conducts extensive credit investigations before purchasing the paper. It is customary to sell commercial paper with a 10-day option period. The buyer is permitted to return the paper within this period, if the risk appears unsatisfactory to him.

Although borrowing through open-market paper is done by firms from all parts of the United States, only a limited number of borrowers can sell commercial paper. The market is restricted to firms which meet three tests. First, they must be in staple lines of business. Second, they are generally large enterprises; in 1951 only 7 percent of firms borrowing in the open market had a net worth of under \$1 million. Third, they must be classed as excellent credit risks. As a result of these stringent requirements, from 1937 through 1951, no losses were suffered by holders of commercial paper. During that period there was one default in each of five years, but full payment was subsequently made.

Almost all the commercial paper issued is sold to banks. Banks are anxious to purchase this paper because of its excellent quality and because it provides a means of diversifying their portfolios. Some paper is sold direct to country banks, but many sales are transacted indirectly through banks in New York or other large cities which either select the paper or furnish credit information on the issuing firms for their correspondents in outlying cities or towns. Unlike the purchase of acceptances, the paper-buying banks ordinarily hold the paper to maturity and can only rediscount it with but cannot sell it in the open market to the Federal Reserve banks.

ECONOMIC SERVICES

The commercial paper system serves as an intermediary between ultimate borrowers and lenders. By providing a market which brings these parties together it renders a useful service to the banks, business firms, and the community at large. The market affords a facility nation-wide in scope through which borrowers with high credit standing and banks with loanable funds are brought into contact.

A supply of paper is obtained in areas with relatively limited credit facilities and is sold in sections where funds are more plentiful.

In so doing, the commercial paper market tends to make borrowers less dependent on their local banks. They obtain their financing more easily by using the dealer and as their credit standing improves and their paper becomes more widely known, borrowers are able to obtain funds at lower cost. Moreover, open-market borrowing may be necessary in view of the statutory limitation on loans to one borrower found in federal banking legislation. Against these advantages, the borrower is required to submit to extensive requests for information and may suffer from the lack of personal relations with the paper-buying banks. In practice, the borrower frequently alternates between use of the market and his own bank.

The commercial paper market affords banks and other investors an investment which is safe, liquid, and at the same time yields a fairly high rate of return. The paper is well suited as a safe and liquid constituent of a bank's secondary reserves.

Finally, the commercial paper market, by increasing the mobility and availability of funds throughout the country, tends to increase competition in the market for funds. The result has been, within the limited scope of the system, to equalize interest rates as well as availability of funds in different sections of the country, thereby making far more effective employment of the country's credit resources.

Changes in the structure of banking in this country and the introduction of a central banking system in 1914 have radically altered the need for and importance of the commercial paper market. Three decades ago, in 1920, thirty dealers handled a peak volume of \$1,250 million of paper representing 4,000 borrowers. There were $2\frac{1}{2}$ times as many dealers, 3 times as much paper, and 11 times as many borrowers as there were in 1951.

■ RECEIVABLES FINANCE

We conclude this chapter with a discussion of special facilities that have developed to finance business enterprises whose needs the commercial banks cannot satisfy on ordinary terms. While these specialized financing institutions may have had unique positions in the credit market at an earlier date in the history of the United States, during the 1930's commercial banks entered fields formerly dominated by other credit-granting institutions as is evident in Table 24 (page 186). Moreover, the markets formerly served by commercial banks have been penetrated by the specialized financial institutions so that interagency competition in the credit market has increased markedly. The institutions that provide specialized

financing facilities tap the money market, not as lenders but as borrowers. In addition, these institutions borrow heavily directly from commercial banks in order to raise funds necessary to the conduct of their operations.

COMMERCIAL FINANCE COMPANIES

The commercial finance company extends loans to manufacturers, wholesalers and jobbers upon the security of an assignment of acceptable accounts receivable, typically without notice to the trade debtors whose accounts are pledged. The first accounts-receivable financing company started in Chicago in 1905. Until 1920 practically all the business was conducted by local companies of medium size operating in a limited area. Subsequently, several large companies operating on a national scale have come into the field. During the depression following 1929 many small and medium-sized business concerns suffering from depleted working capital needed funds and were able to obtain it on favorable terms from commercial finance companies. Thus in the 1930's there was a tremendous increase—both in the number of companies and in the volume of business handled.

Protected by the most liquid assets (other than cash) that business firms possess and engaging in the necessary costly supervision of accounts receivable, finance companies enable business firms to obtain needed funds. The commercial finance company in effect serves as an intermediary between the commercial bank (from whom it borrows) and those business concerns which require larger sums than the credit standards of the banks permit to those borrowing without security. The commercial finance company makes advances from time to time to borrowers against assignment of accounts receivable due from their customers, the advances being simultaneous with the creation and assignment of the accounts. Because the borrowers dislike having their customers know that they have assigned their accounts to raise funds, the finance company employs a non-notification plan, in that it does not notify the borrower's debtors that their accounts have been assigned to it, but merely reserves the right to do so. The finance company seeks to protect itself in several ways. An initial audit of the borrower's books is made by its accountant before the formal contract defining the rights and obligations of the parties is signed, and this is followed by periodic audits every 60 days or less. The borrower is required to furnish duplicate invoices and shipping receipts when submitting accounts. He further must furnish the finance company each month

with statements of account he has prepared for his customers, and once every 6 months each customer's account is verified directly with the customer. The finance company usually advances only 70 to 80 percent of the face amount of the receivables and pays the balance as the accounts are collected.⁴ The borrower is required to forward to the finance company on the day of receipt all original remittances that he receives from his customers. Should an account remain unpaid for a specified period, such as 30 or 60 days, the borrower must repurchase it, although the finance company may retain the past due accounts as additional collateral.

The extensiveness of the finance company's credit and clerical work has kept its losses down. But the elaborate procedure for controlling risks is costly. Rates charged borrowers vary with the amount involved and the volume of bookkeeping required, ranging from roughly 12 to 24 percent per annum on the funds for the actual time advanced.⁵

The patrons of finance companies range in size from small to large firms. The common characteristics of these firms are working capital too limited and available bank credit inadequate for the volume of business they can obtain. The test of propriety for extending credit to these firms is a twofold one—will the additional business rendered possible yield a profit in excess of its cost and will it sufficiently accelerate the turnover of the cash liquid capital of the borrower so as to ensure the payment of its obligations as they mature.⁶ The services of finance companies, therefore, are not suitable for service industries (subject to claims by customers for damage), for those furnishing special order precision parts, or for those unstable in nature.

FACTORS

The "old line factor"—unlike the commercial finance company—does not lend money to the borrower on the security of accounts receivable but instead purchases the accounts outright and assumes the risk of loss if the account debtors are unable to pay. Historically, the factor antedates the commercial finance company.

⁴ The percentage varies with the average returns, trade and cash discounts, bad debt losses and credit ratings of customers, but good practice limits the advance to the cost to the borrower of the item being sold.

⁵ Quoted either as from $\frac{1}{80}$ th of 1 percent per day to $\frac{1}{15}$ th of 1 percent per day on the daily cash balance owed by the borrower, or as from 1 percent to 2 percent of the face amount of receivables assigned, plus interest at the rate of 6 percent per annum on the cash balances owed.

⁶ W. S. Seidman, *Finance Companies and Factors* (New York, 1949), p. 15.

Originally the factor acted as selling agent for the textile mill and was therefore known as a "commission merchant." Today factoring companies have relinquished their merchandising function and specialize in financing. From the textile industry, their activities have been extended in recent years to other lines as well. They serve wholesalers and jobbers as well as manufacturers.

The factor purchases a concern's accounts receivable without recourse to the vendor for any credit loss on accounts and with notice (notification) given to trade customers that their accounts have been purchased. The operations of the factor may be outlined as follows: *Sales are made by the mill subject to the factor's approval (since he bears all the risk) and are billed in the latter's name. The factor deals directly with the customer because he assumes the credit risk as well as the responsibility of collecting the purchased accounts. Once the customer of the factor's client has accepted the merchandise without dispute, the client is entirely out of the picture. In general, the factor does not require either initial or subsequent periodic audits of his client's books by his own accountant but accepts statements prepared by the client's accountant. His risk is confined largely to excessive returns by the client's customers and possible financial embarrassment of those customers.*

Unlike the commercial finance company, which remits daily, the factor remits periodically for the accounts purchased. The average monthly due date (on earliest terms) of the accounts is calculated and the net purchase price is credited to the client's account 10 days thereafter. The factoring charge varies with the length of credit terms and the volume of business, from $\frac{1}{2}$ of 1 percent to 4 percent of the net amount of the accounts purchased. In addition, the client pays interest at the rate of 6 percent per annum on all sums advanced or remitted to him before the average due date of the accounts.

The financial condition of the factor's client is on the average better than that of a commercial finance company customer. The latter seeks primarily financial assistance, whereas the former is often more interested in risk sharing. Factoring enables the client to shift the credit risks to the factor and thus go on a cash basis as far as sales are concerned.

INVENTORY LENDING

The secret of the commercial finance companies' success has been their flexibility and resourcefulness in custom tailoring financing plans to their clients' specific needs. The one cardinal principle underlying their operations is that advances must be se-

cured by collateral. Few, if any, finance companies limit their activities to receivables finance, and the same is true, albeit to a more limited degree, of factors. Inventory loans on raw materials and finished products supplement receivables financing. Both the factor and the commercial finance company finance drop shipments and make inventory loans.

In *drop shipments* a jobber (usually with a limited net worth) has goods produced by a manufacturer and shipped directly to the jobber's customers. The unique feature of this type of financing is that the factor or finance company relieves the manufacturer of all credit risk in connection with shipments made for the account of the jobber, and the manufacturer, in turn, relieves the factor or finance company of the risk of returns of merchandise. The accounts are assigned, usually with notification to the trade debtor. If the factor does the financing, he assumes the risk as there is no recourse to the vendor; if the accounts are assigned to a commercial finance company, the risk is borne by the jobber since the finance company acquires the paper with recourse to the vendor in the event of non-payment. The remaining provisions are practically the same as in usual factoring or accounts-receivable financing agreements. The customary charge is a percentage of the jobber's sales, plus interest at 6 percent per annum on all advances.

Finance companies offer a supplemental service by lending against inventory. Inventory loans of this type are usually additional advances to firms that have exhausted their borrowing capacity on accounts receivable by assigning all but their poorest receivables. The finance company in such circumstances prefers to lend against inventory inasmuch as continued loans on less liquid accounts receivable would adversely affect the finance company's ability to borrow from banks.

Inventory loans are secured by field⁷ or public warehouse receipts or factor's liens. Trust receipts may be used in transitional situations to bridge the gap which occurs when collateral is being converted from one form to another—for example, from warehouse receipts to accounts receivable. The more stable the price, the broader the market, the less costly the liquidation, and the less the danger of obsolescence or deterioration, the greater is the percentage of the value that will be lent. Such loans are useful in highly seasonal industries, such as lumber and canning, in industries in which considerable capital is tied up in an aging process, such as lumber and

⁷ A part of the borrower's premises, set aside under a public warehouseman, who operates it as a warehouse for the borrower's goods only.

tobacco, and in cases in which substantial price discounts can be obtained by purchasing in large quantities, such as in carload lots.

QUESTIONS AND PROBLEMS

1. a. What service does the money market render to: (1) the commercial banks; (2) the business community?
 b. Some claim that in the United States there is not one but many money markets. Explain.
 c. To what extent do the several sectors of the money market represent noncompeting groups?
 d. Why are rates charged customers by banks less sensitive to changing economic conditions than are rates charged in the open money markets?
2. Contrast the relative merits of bankers' acceptances, commercial paper and Treasury bills as secondary reserves for commercial banks.
3. "Before the Great War [1914-18] the elaborate and intricate machinery of the London discount market, which had developed over a period of generations, was relied upon for the financing of the bulk of the foreign trade of the United States. . . . London's position was undisputed. The early development of England's foreign trade, the far-flung empire, the inviolate adherence to the gold standard, the efficient domestic banking machinery with the Bank of England serving as stabilizer and governor, the overseas banks, the continuous flow of capital abroad, the position of London as an international settling center, the absence of an important stock market demand for funds, all contributed to London's position." (B. H. Beckhart, *The New York Money Market*, New York, 1932, Vol. III, p. 253.)
 a. Do you agree with authorities who have regarded the bankers' acceptance market in the United States as more or less a "hothouse" product? Explain, pointing out any factors essential to the existence of a wide and active market which were lacking.
 b. What has been the role of the Federal Reserve banks in the development of the bankers' acceptance market, both before and since the early 1930's?
 c. Why can it be said that "during the 1920's the open-market rate on bankers' acceptances was governed by the buying rate of the Reserve banks"?
4. a. Why is the commercial paper market indigenous to the United States?
 b. What factors account for the changed status of the commercial paper market since 1920, when over \$1.2 billion of commercial paper was outstanding?
5. Contrast the field of service to business of the commercial paper dealer with that of the commercial finance company.
6. a. Why have the commercial banks only recently engaged in accounts-receivable finance on an extensive scale?

- b. Distinguish between the service of a factor and a commercial finance company.
7. Contrast carefully the role of the dealer in the commercial paper, bankers' acceptance, and United States Government securities markets.

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PART III

**CENTRAL
BANKING**

CHAPTER 11

Banking Development in the United States to 1913

A CENTRAL bank is an institution charged with the responsibility of regulating the supply, availability, and cost of money in the interests of the general public. In order to regulate the quantity of money the central bank is given a special group of powers which other institutions do not possess or which they possess in only a limited degree. These special powers may be allocated to more than one institution, although only one institution is generally known as the central bank. The student must bear in mind, therefore, that we can distinguish between a central bank, by which we mean an institution, and central banking, which refers to a special group of powers to control the stock of money. It is not illogical, therefore, to refer to the Federal Reserve System as the central bank in the United States and at the same time refer to the central banking functions of the Treasury or other federal agencies whose spheres of activity affect monetary and banking policy. It should be noted that no one alludes to the Treasury or the federal credit agencies as a central bank.

Today almost all countries have central banks. It is only in the present century that the importance of central banking gained wide recognition. The establishment of central banks in the modern sense dates back to the nineteenth century. To be sure, the State Bank

of Sweden, the oldest central bank, dates back to 1668 and the Bank of England, the most celebrated of all central banks, was established in 1694. It was not until the legislation of 1897 that the Swedish Riksbank was granted the powers that gave it a status comparable to the central banks of other countries. The Bank of England was granted a monopoly of note issue only in 1833, and it was not until Peel's Act of 1844 that its powers as a central bank were clearly formulated. Among the other central banks organized in the nineteenth century was the Bank of France established in 1800, the German Reichsbank, chartered in 1875 to succeed various state banks of the German principalities, the Bank of Spain, and the National Bank of Belgium.

The complex financial problems which wars and the economic crises of the twentieth century have produced accorded central banking a distinct role in both the theory and practice of finance. The economic, political, and social changes occurring between the two World Wars catapulted the principles and operations of central banking into the center of the economic stage. The great expansion of central banks throughout the world both in numbers and in powers occurred during the nineteen twenties. From 1929 onward central banking has been characterized by increased state participation culminating after World War II in the movement to nationalize previously private-owned central banks. Nationalization of the Bank of France and the Bank of England are cases in point. Throughout the world governments have taken measures to integrate central banks more closely into the machinery for carrying out public economic policy.

■ ACTIVITIES AND FUNCTIONS OF CENTRAL BANKS

The functions of the central bank are vastly different from commercial banks. The business of the central bank is to control the money stock in such a way as to promote the interest of the general public. While this purpose is characteristic of all central banks, banks in the different countries have varying characteristics which are explained by the environment in which each operates, their methods of establishment, and a host of other factors. Since the chief aim of the central bank is public service, the profit motive is subordinated to it. The bank will sacrifice earnings when profitable investment opportunities conflict with the maintenance of financial stability. In many countries the central bank has been nationalized. In such instances the management is appointed by the government, and profits are made subservient to the conduct of

operations in the interest of public economic policy. Where central banks are not owned by the government, they may be managed in part or wholly by governmental representatives or representatives whose appointments were subject to governmental approval. To reduce the incentives of profit-making activities the laws governing the operations of privately owned central banks limit dividend payments to stockholders. Frequently the government shares in the profits of the central bank even though it does not own shares in it. Central banks are often referred to as "bankers' banks" because they frequently confine their activities to transactions with other banks. There are, however, notable exceptions. Thus, the Bank of France is not only the central bank but also the principal commercial bank in France. The same condition exists in other countries, such as in Egypt and in Australia.

In order to perform its prime policy function of controlling the stock of money in the interest of general welfare, the central bank is generally endowed with the following principal powers: (1) to hold and manage reserves of the commercial banks; (2) to issue currency; and (3) to serve as fiscal agent of the national government.

MANAGEMENT OF BANK RESERVES

The core of control over commercial banks lies in controlling their reserves and hence their credit-creating powers. The central bank holds much of the reserves of these banks, and so it acts as guardian of the ultimate reserves of the country, which support its credit and banking system. The other banks hold deposits on the books of the central bank or notes that it issues. Again, the central bank rediscounts for these other banks, making available to them credit based on these ultimate reserves. It is the lender of last resort, and therefore the major provider of liquidity for the economy. As an adjunct to general credit control, it engages in open-market operations whereby purchases and sales are made in the general money market at home and abroad. Lastly, the central bank provides leadership in the banking system. Other banks look to it for guidance and direction, shaping their policies more or less in accordance with its dictates. It acts as regulator and stabilizer of bank credit in the country, molding its policies broadly in accordance with what it conceives to be the general welfare. Control over the monetary stock is, in fact, the primary task of the central bank.

NOTE ISSUE

In almost every country in the world the authority to issue circulating notes has been removed from the commercial banks. In some countries the central bank has received a monopoly of note issue though under specified restrictions designed to insure the safety, if not the elasticity, of the note issues. In some countries the treasury also issues notes. The preponderant volume of notes in circulation, however, are those of the central bank. Having a full or near monopoly of the note issue, the central bank is obviously in a position to control the volume of circulating hand-to-hand money. It has the responsibility of providing an adequate stock of notes so that business activity will not be impeded by a lack of media of exchange, and, at the same time, it must guard against excessive issues, which would lead to inflation. It should at all times act to ensure the convertibility of deposits into currency. If the country maintains a metallic standard, the central bank in its management of the note issues must take proper measures to insure at all times the direct convertibility of the notes into the standard metallic money. Moreover, by controlling the credit-creating powers of the banks, the central bank also attempts to insure the convertibility of demand deposits into the standard money.

FISCAL AGENT OF THE GOVERNMENT

The services of the central bank as the principal fiscal agent of the national government include the holding of the government's deposit account, the collection of items deposited therein, the cashing of checks drawn against it, the transfer of funds throughout the country and abroad, the purchase and sale of securities for the account of government trust funds, assistance in the flotation of government securities and in their exchange and redemption, and the payment of interest upon outstanding government obligations.

More important than these routine types of operations, however, is the central bank's responsibility to guard against the spread of disturbances and maladjustments in the economic system which may result from the government's fiscal operations. The significance of this responsibility can well be understood when one reflects upon the greatly expanded scope of government taxation, borrowing, and expenditure in recent years. Because of its strategic position as controller of the volume of money in circulation, the central bank can intelligently advise the national government as to the best methods of raising funds and can take appropriate steps to protect

the commercial banks, as well as business enterprise in general, from a too forceful impact of government fiscal operations.

Ninety percent of the tasks of the central banks are semimechanical in nature, involving the handling of government funds, check collections, etc. Perhaps the greatest day-to-day usefulness of central banks lies in their contribution to the efficiency of the monetary and banking mechanism. They are a vital part of a smoothly running monetary system. They facilitate the unspectacular but tremendously important routine operations of administering the currency and clearing and collecting credit instruments. They permit the pooling of the financial resources of the country and introduce a degree of flexibility, and stability, that was not achieved in the past. They are an indispensable part of an efficient financial system, and nothing attests more fully to the smoothness with which they operate than the fact that ordinarily we are scarcely aware that they are doing anything.

■ EARLY AMERICAN BANKING DEVELOPMENT

In colonial times American banking was confined principally to land banks which issued batches of notes on the security of real estate. The operations of these banks were justified on the grounds that they remedied the shortage of specie from which the colonies were alleged to be suffering. These banks were especially vulnerable to failure both because of the reckless manner in which many were operated and because of the instability of land values which comprised the security for their loans. Along the Atlantic seaboard there arose banks which specialized in making short-term loans on the self-liquidating paper of commercial houses. The notes of these banks proved more sound than those of the land banks, and the seaboard banks were able to command the public's confidence.

Several banks, in the modern sense, were operating before the Constitution was adopted. The first of these, the Bank of North America, was established in Philadelphia in 1782. It performed valuable services for both the government and the general public. Large loans were granted to the central government at a time when, because of its lack of taxing power, it was forced to appeal to the states for funds. Loans granted to individuals enabled them to expand the scope of their business operations. The Bank of North America performed valiant service in issuing notes of good quality which were redeemable in specie on demand. In 1784 the Bank of Massachusetts and the Bank of New York were founded. All of these were well-managed and successful banks of deposit and issue.

The first bank to be established under a federal charter was the *First Bank of the United States*, which in 1791 received a 20-year charter. The new bank was located in Philadelphia and was capitalized at \$10 million. The government subscribed to one fifth of the capital stock, borrowing the \$2 million from the bank and agreeing to repay it in ten annual installments.

The remaining capital stock was sold to private individuals. Subscriptions by a single individual were limited to 1,000 shares of \$400 par value. The bank was governed by a board of directors of twenty-five elected by the stockholders; the number of votes per share decreased as the number of shares owned increased. Foreign stockholders were not permitted to vote. The bank was authorized to issue notes up to the amount of its capital, and these were made legal tender only in payments to the government. Restrictions were placed upon its loans. The maximum rate of interest on its loans was fixed at 6 percent. The bank was required to report to and submit to inspection by the Secretary of the Treasury. It was permitted to establish branches, of which it set up eight.

This institution was charged with several duties. First, it had to furnish a stable and satisfactory note currency. Because it would not accept the notes of those state banks which refused to redeem them, it acted as a deterrent to overissue of notes by state banks. Second, it supplied needed banking accommodation to the public. Finally, it transacted the fiscal business of the government, aiding in the collection of taxes and providing safekeeping for the funds. Although the bank kept aloof from politics and seemed to be well run when compared with the other banks operating in the same years, it was attacked on constitutional grounds by the Democrats, who questioned the authority of Congress to charter a national bank. Moreover, it encountered the bitter opposition of the state banks whose activities it restricted, as well as of agricultural sections which favored more liberal extension of credit. The most damaging criticism, however, was that after 1802 when the government sold its shares, 18,000 of the bank's 25,000 shares were held abroad. Although foreigners received dividends on these shares, they could not vote by proxy and thus lacked a direct voice in its affairs. Despite the bank's services both to the government and to business, Congress in 1811 refused to renew its charter, responding by the narrowest of margins to the current opposition.

After the dissolution of the First Bank of the United States and during the war with Great Britain, specie payments were suspended except in New England. The money market became disorganized,

and the public credit reached a low ebb. The number of state banks increased rapidly, note issues expanded, and depreciation of notes and bank failures became common. There was now voiced a demand for the re-establishment of the Bank, which was expected to resume specie payments, restore an orderly currency and help the embarrassed Treasury. Accordingly, in 1816 a new bank was chartered for twenty years.

The *Second Bank of the United States* was capitalized at \$35 million, one fifth again being provided by the government and fourth fifths by the public. In general, its charter provisions strongly resembled those of the first bank as to both powers and management, although they differed in some points of detail. One fifth of the twenty-five directors were now appointed by the President. Specie payments were resumed in 1817, the year in which the bank began operations. Despite serious difficulties and charges of mismanagement in its early years the bank achieved great success under the administration of Nicholas Biddle begun in 1823. Contraction of credit stopped and twenty-seven branches, under close scrutiny, were eventually established. As a commercial bank, it lent to individuals, business firms, states, and the federal government and accepted deposits from these same parties. It issued bank notes and transferred funds from one region to another. The bank also performed various functions usually entrusted to a central bank. It held government deposits, transferred funds from one section to another for the government, and served as fiscal agent of the Treasury. Moreover, it regulated state banks by presenting their notes for redemption and insisted upon redemption of their obligations in specie, thus limiting the amount of credit the state banks created.

Successful operations continued until the summer of 1833, when the bank was the center of political controversy. Like its predecessor it was opposed by the state banks, which resented the competition it offered in making loans as well as the limitations placed on their note issues. Many sections of the country which favored easy-money policies objected to the bank's sound lending practices. Fear was expressed that the bank was acquiring monopoly power. The states' rights parties declared the bank was unconstitutional. The bank incurred the enmity of Andrew Jackson, and in 1832 he vetoed a bill to recharter it. The following year Jackson directed the removal of government deposits to certain state banks. The bank began to prepare for liquidation and to dispose of its branches; it was able to obtain a charter from Pennsylvania and to continue in business after 1836, but it ended in complete failure in 1841.

This era of quasi-central banks was followed by a period of unit-banking in which our banking system comprised private (unincorporated) banks and banks operating under corporate charters granted by the various states. The number of state banks rose from 506 in 1834 to 901 in 1840, and their note issues soared. Widespread suspension of bank note redemption and frequent bank failures characterized the financial panic of 1837. From 1843 to 1861 there was an uninterrupted expansion in both the number of banks and their issues of bank notes in circulation. In many parts of the country banking conditions remained chaotic until after the establishment of the National Banking System. The states were affected unequally with the worst banking conditions in the South and West. But certain defects were common to banking law, supervision, and practice in all states. Capital was frequently paid in by borrowing from the bank. Note issues were not related to the amount of cash held for redemption purposes, and redemption was not provided except over the counter of the issuing bank. The issues, therefore, lacked uniformity and required the use of "bank note detectors" for up-to-date information about counterfeits and notes of banks no longer in existence as well as current rates of depreciation on notes of solvent banks located at a distance whose notes were difficult to redeem. Lending practices were extremely lax, and supervision was inadequate. Small wonder, then, that the period 1836-1863 is called the "wildcat" banking era.

Even the pre-Civil War period was not without some of the characteristics commonly attributed to central banking. Some of the stronger banks in Boston found themselves at a disadvantage because of the tendency for their notes to be driven out of circulation by the depreciated notes of outlying banks. In 1824 the *Suffolk Bank* of Boston instituted a plan of country bank note redemption whereby New England bank notes, already in high standing, became the soundest in the country. This Boston bank agreed to receive at par the notes of any bank keeping with it a sum sufficient for the current redemption of its notes and in addition a permanent deposit. Periodically the Suffolk Bank would send such notes back to the issuing bank for payment at par in the notes of any participating New England bank. The notes of nonparticipating country banks were returned to their issuer for redemption in specie. In substance, this device amounted to bringing pressure on other banks by confronting them with the possibility of a sudden drain of reserves if they refused to cooperate in maintaining satisfactory banking standards. Boston banks were permitted by the plan to keep their share

of notes in circulation. By acting as a clearing house for New England bank notes, the Suffolk Bank not only prevented undue expansion of country bank issues, but also gave New England a currency of uniform value, readily accepted at par in that territory and in other regions as well. The Suffolk system continued in operation until the Civil War.

In New York, too, there were several interesting developments. A *Safety Fund System*, set up in 1829, arranged for banks established under the law to contribute annually to a fund $\frac{1}{2}$ of 1 percent of their capital until the payments aggregated 3 percent. The fund was to be used to make good any deficit arising in the liquidation of a failed bank and was to be restored by additional annual contributions from participating banks. After heavy failures in 1840-1842 protection was limited to noteholders, and depositors were excluded. This plan was a sort of forerunner of the deposit guaranty described in Chapter 7. Another development was the *Free Banking Law* passed in 1838, which permitted democratic chartering of banks upon compliance with certain general provisions of law and not solely by special act of the legislature as had been the case up to that year. The granting of bank charters by special act of the legislature fell into disfavor because it often gave monopoly power to the favored bank, tended to restrict the banking facilities in the country, and lent itself to serious political abuse. The 1838 law further provided for the issue of bank notes upon deposit with a state official of an equal amount of bonds of the United States, New York, or other approved states, or of mortgages on improved New York farm land. When the collateral was found to be inadequate in a number of cases of failure among New York banks, the requirements were made more stringent, but the plan never proved very successful. Both features—the note issue provisions and the free banking idea—were later incorporated in the National Bank Act of 1863.

The relationships between banks and the states in the pre-Civil War period varied widely. At one extreme, the state banks merely received their charters from the state; they secured their capital from private sources and made loans that were permitted within the broad framework of the banking laws. At the other extreme, many banks were wholly owned and operated by states. There were wide variations between these two extremes. Thus, some banks were owned jointly by the state and by private investors. Others had to pay large sums to the state for the privilege of banking. And still other banks were chartered only if they would lend stipulated amounts to canal companies, railroads, or other enterprises deemed meritorious by the state legislature. In a period when "capital" was still

scarce, states encouraged and even forced banks to lend large amounts for financing various projects.

The dissolution of the Second Bank of the United States forced the government to obtain another depository. The Treasury had unsatisfactory experiences in attempting to keep its funds in selected state banks since many failed or suspended specie payments after 1837. In 1840 Congress passed a law providing for payment of taxes and duties in specie as well as for the establishment of an independent Treasury which was to serve as a depository for government funds. The law was repealed in 1841, and the Treasury was again dependent upon state banks to perform its fiscal functions. In 1846 Congress established the *Independent Treasury System*, which continued in existence with modifications until 1920 when its functions were transferred to the Federal Reserve banks.

■ THE NATIONAL BANKING SYSTEM

Despite many expedients that were introduced to control banks, and with the notable exceptions of a few states, banking conditions were generally chaotic in the years between the demise of the Second Bank of the United States and the passage of the National Banking Act. Although agitation to reform the banking and currency system of the United States had been present for many years, it was not until 1863 that "an act to provide a National currency, secured by a Pledge of United States Stocks and to provide for the Circulation and Redemption thereof" was passed. This act, the legal beginning of the National Banking System, was superseded by a new law in 1864. It is this latter statute that is usually referred to as the National Banking Act.

The act was designed primarily (1) to secure a safe and uniform bank note currency by supplanting the unsafe and unsound state banking systems with a national banking system and (2) to secure a new source of loans to finance the Civil War by providing a market for United States bonds against which national bank notes were to be issued. In addition, proponents of the act expected the Treasury to benefit from dependable depositories instead of having to rely upon weak state banks.

The major provisions of the act regulating the establishment and operation of national banks may be summarized as follows:

1. *Capital.* To enhance sound banking, minimum capital requirements were prescribed for new national banks varying with the population of the city in which the bank was located as follows:

<i>Minimum Capital</i>	<i>Population</i>
\$ 50,000	Not over 6,000 inhabitants ¹
\$100,000	6,000 to 50,000 inhabitants
\$200,000	Over 50,000 inhabitants.

At least 50 percent of the subscribed capital had to be paid in before a bank could begin business and the remainder within 5 months. The stock was subject to double liability. In order to expand the market for government securities, each bank was required to deliver to the Treasury United States registered bonds equal to not less than \$30,000 or one third of its capital stock, whichever was larger.² These bonds could be used as collateral for issues of national bank notes.

2. *Bank loans.* Many restrictions were placed on the lending operations of the banks in order to promote bank safety and liquidity.

3. *Note issues.* National banks were permitted to issue their notes on the basis of government bonds deposited with the Comptroller of the Currency. Each national bank could issue notes, not to exceed 90 percent of par or market value of the bonds, whichever was smaller. This was later amended to permit issuance up to the par value of the bonds. Each bank's issue of notes was limited to the paid-in capital of the bank. The issuing bank was required to maintain a redemption fund with the Comptroller equal to 5 percent of its outstanding bank notes. Funds held in this form could be counted as part of the reserves which banks were required to hold against deposits. National bank notes were guaranteed by the United States Government. In the event a national bank refused to redeem its notes, the Comptroller was empowered to sell the pledged bonds and use the proceeds to pay noteholders; any remaining claims of noteholders would have a first claim against the assets of the banks. Every national bank was required to accept the notes of every other national bank at par. The original limitation of national bank notes to \$300 million was removed in 1875.

4. *Reserve requirements.* The act specified that minimum reserves in lawful money must be maintained against both deposits and circulating note liabilities; in 1874 notes were exempted from reserve requirements. National banks in *central reserve cities* were required to hold reserves in lawful money equal to 25 percent of deposits. Banks in *reserve cities* also had to keep reserves of 25 percent, but half could be in the form of deposits with national banks in central

¹ From 1900 to 1933 minimum capital requirements were only \$25,000 in towns with 500 or less inhabitants. In 1933 the \$50,000 minimum was reestablished.

² Dropped after 1900.

reserve cities. Other national banks, the so-called *country banks*, were required to keep reserves of 15 percent against deposits, but three fifths could be in the form of deposits with national banks in reserve and central reserve cities. The reserve provisions led to a considerable degree of pyramiding whereby a part of the reserves of country banks consisted of deposits with reserve city banks and part of these in turn were redeposited with central reserve city banks.

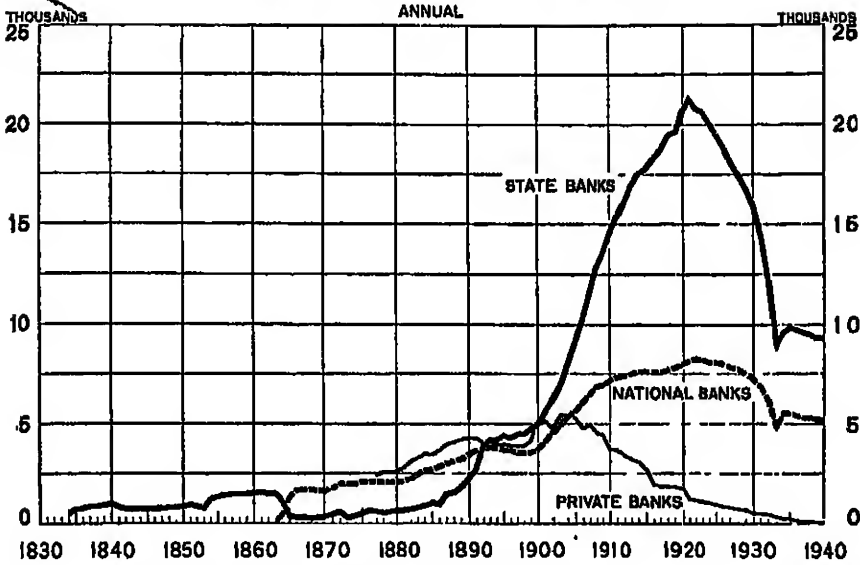
5. *Supervision.* A new office, that of the Comptroller of the Currency, was established in the Treasury Department. The Comptroller is supervisor of the National Banking Act. As such, he not only grants charters to national banks, but also receives periodic reports from the banks. In order to insure compliance with the act, his office maintains a corps of examiners responsible for the annual examination of each national bank.

The response of bankers to the national banking law was disappointing to the lawmakers. Since state banks found it more profitable to retain their state charter with their note-issuing privileges than to come under the more stringent federal banking statute, Congress decided to take action designed to accelerate the growth of national banks. Therefore, it passed an act levying a prohibitive 10-percent tax on any individual or bank paying out or using state bank notes after July 1, 1866. This tax was effective; by October 1 of the same year 1,566 banks had taken out national charters, and the formation of national banks went forward rapidly for several years. In subsequent years more and more people found it convenient to utilize checking accounts rather than currency to effect payments. The loans of banks, therefore, gave rise to demand deposit rather than bank note expansion. Bank deposits and bank notes are merely alternative forms of bank obligations. With the privilege of creating checking deposits, a bank was able to operate successfully without issuing notes. Since state laws were generally more liberal and imposed less restrictions on bank operations than the National Banking Act, banks preferred to operate under state rather than federal charter. After 1880 state banks outstripped national banks in rate of growth, as is shown in Figure 17. On June 30, 1914, there were 19,240 state-chartered institutions as compared with 7,525 national banks, although the average size of the latter was far greater. The resources of the national banks were \$11,482 million as compared with \$15,489 million for the more numerous state institutions.

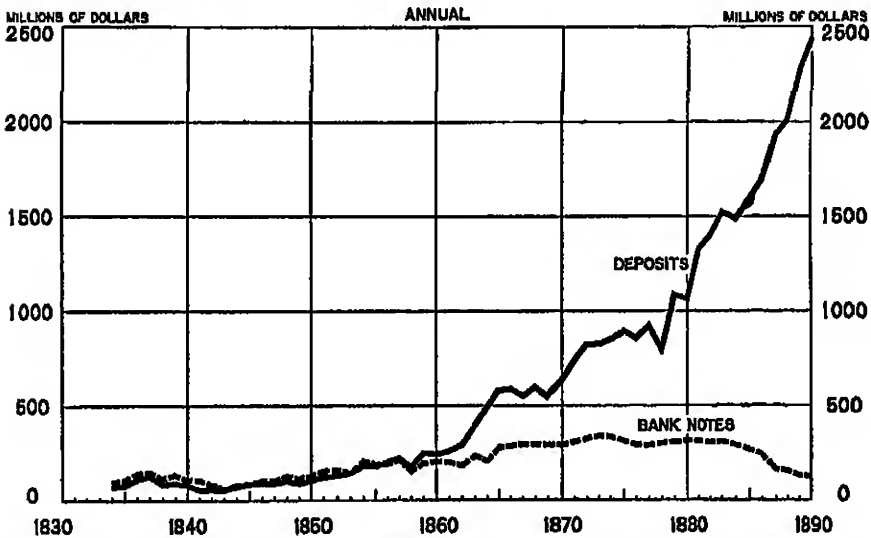
There is no questioning the fact that the National Banking System set standards of banking requirements and practices that were superior to those otherwise generally in force in the country. Moreover, the system did succeed in its primary objective of establishing a safe

FIGURE 17

NUMBER OF COMMERCIAL BANKS



BANK NOTES AND DEPOSITS OF STATE AND NATIONAL BANKS



Source: Board of Governors of the Federal Reserve System, *Banking Studies* (Washington, 1941), pp. 13, 15.

and uniform bank note issue in the country. The new banking system, however, did not meet the needs of our changing economy, and grave defects in the act became apparent with the passage of time. Demands for further banking reforms developed during the late years of the nineteenth century and became more insistent in the early years of the twentieth century. The National Banking System was concerned chiefly with safety; regulation of bank note issue was its keynote. Little attention was paid to the regulation of deposits which became the dominant component of the money supply.

The chief complaint directed at the National Banking System was the lack of flexibility in the nation's currency and bank reserves. If the community started to convert bank deposits into currency, the banking system was soon faced with a shortage of reserves. The decline in bank reserves led to a tightening of credit. If a shortage of bank reserves became acute, it led to suspension of cash payments by the banks.

The shortcomings of the National Banking System were:

1. *Defective reserve requirements.* The system of reserves against notes and deposits inaugurated by the act encouraged instability in economic activity. We have already called attention to the provision whereby country and reserve city banks could keep part of their legal reserves on deposit with banks in reserve city and central reserve city banks respectively. The greatest concentration of reserves was in New York City, then, as now, the leading financial center of our country. Many New York banks competed actively for the funds of interior banks by paying interest on the deposits. Once these funds were obtained, the New York City banks expanded their loans to the maximum permitted by existing reserve requirements. As the interior banks needed currency in the spring, early autumn, and holiday season, they withdrew their deposits from the large city banks, who in turn were placed under great pressure to reduce their loan portfolios.

The reduction in loans was mainly in call loans to finance speculation on the stock exchange. The forced selling of shares that ensued raised interest rates and depressed stock prices—a situation which was often the forerunner of a decline in general business activity. If the need for currency in the interior coincided with a widespread internal or external currency drain, the reduction in bank reserves led the banks not only to cease making new loans but also to liquidate outstanding loans. The result of these defensive measures by the banks was to precipitate a scramble to liquidate, which often resulted in a financial crisis.

Conversely, when currency flowed back to the banks in the interior, they would deposit their surplus reserves with the large city banks. The large city banks would, in turn, reduce interest rates, thereby often encouraging a renewed outburst of speculation in the stock market.

Because the city banks carrying banker's balances held almost no excess reserves, when there was a withdrawal of balances deposited with them, they had to choose between a contraction of loans, a reduction in reserves below the legal minimum, or suspension of cash payments. Critics of the National Banking System placed a large part of the blame for the sharp variations in business activity upon the rigid reserve requirements under the act. The law, however, did not forbid banks to allow reserves to fall below the legal limit. It merely forbade a bank to make new loans and pay dividends while its reserves were below the legal limit. On some occasions banks did permit their reserves to fall below the legal minimum by using required reserves to meet demands for conversion of deposits into currency. On other occasions the banks refused to use required reserves to meet demands for conversion of deposits into currency and were forced to contract loans. If loan contraction did not enable banks to meet demands for currency, suspension of cash payments to depositors followed. It has been argued by some authorities that the banks were at fault in not maintaining reserves in excess of the legal minimum requirements. If they did not extend loans to the maximum amount permitted by the law, they would have made provision for surplus cash which could be used in times of emergency.

2. *Defective provisions for note issue.* If the banks were able to convert their deposit liabilities into currency they would not have been forced to suspend cash payments or to reduce their outstanding loans in order to obtain the needed currency. The critics of the National Banking System pointed to the conditions of issue of National Bank Notes as an important factor in preventing banks from obtaining the needed amounts of currency.

While the national bank notes were safe and circulated at par, there were no provisions for appropriate variations in their quantity in response to the seasonal, cyclical, and emergency variations in the needs of the public for hand-to-hand currency. The National Bank Notes, it was alleged, were inelastic because their issuance and retirement were more closely related to the price and availability of the government bonds which secured them than they were to the needs of the economy. These notes could be issued only on the basis of federal bonds, the amount of notes being limited to 90

percent of the par or market value of the bonds—whichever was lower—deposited with the Comptroller. In 1900 banks were permitted to issue notes up to the par of the bonds. Prior to that date, the supply of notes was limited to 90 percent of the eligible bonds outstanding. Whether this upper limit for bank note issue was attained depended upon the profitability of issuing them. When bond prices were low, a relatively large volume of bank notes was issued. When, however, bond prices rose above par, banks would not issue notes; in fact, they would retire some of the notes outstanding and sell the bonds at a premium. Thus from 1883 to 1891, when business activity was brisk and rising, the outstanding bank notes declined. During this period the government collected more than it spent and used its surplus to retire part of its debt. Banks found it profitable to sell their bonds at large premiums, hence called in their bank notes which were secured by these bonds. From 1892 to 1894 business activity declined. The Treasury's surplus turned into a deficit. Not only did the Treasury not retire any of its outstanding debt, but it also was forced to issue new bonds to finance its deficits. Government bond prices fell, and banks finding it profitable to issue bank notes did so. Thus, the size as well as the price of the government debt led to decreases in bank note circulation when more currency was needed and increases in bank note circulation when less currency was needed.

In addition, national bank notes were lacking in seasonal elasticity. The demand for currency showed seasonal peaks in the spring, early autumn, and before the Christmas holiday. The volume of national bank notes was relatively constant throughout the year. In periods of peak demands for currency demand for loans was also high. In order to meet the peak currency demands, the banks were forced to drain funds from their reserves. As their reserves fell, they could not meet the demand for credit accommodations made by customers. Thus, at times of peak currency demands, reserves were reduced and interest rates rose sharply. In the off seasons as currency moved back to the banks, reserves increased and interest rates fell sharply.

Some banking authorities have asserted that, regardless of the type of note issues permitted so long as there was a fixed limit on note issues, the National Banking System would have encountered difficulties. Banks could issue notes up to the maximum amount permitted and send their excess reserves to the financial centers, hence were unable to issue more notes when they needed them. If their note issue powers were exhausted when the community still desired currency, liquidation of outstanding bank loans or suspension of conversion of deposits into currency was bound to occur.

3. *Absence of a central bank.* In periods of widespread liquidation and hoarding increases in currency can be helpful in arresting a depression. Solution of the problem of bank panic and suspension of convertibility of deposits into cash lay in the maintenance of an adequate supply of surplus reserves on which the banks might draw. Privately owned banks operating competitively for profit are not willing to accumulate surplus reserves so long as outlets for acceptable loans are available. Provision for excess reserves to care for convertibility of deposits into currency is the proper function of a central bank. Under the National Banking System there was no official or semiofficial banking institution to assume over-all direction of the monetary and banking system. Thus, reserves were scattered, and there was no provision for their mobilization and use wherever they might be needed. There were no adequate means available to the banks to replenish their reserves when necessary. The means were lacking to insure the effective cooperation on the part of the banks that was necessary to protect their own and the public's interest in time of stress or crisis. There was a marked lack of equality of credit facilities between different sections of the country. There was no domestic clearing system covering the entire country which afforded facilities for making domestic exchanges between different localities or sections.

4. *Independent treasury.* The provision of law under which the government acted as custodian of its own funds was a disturbing influence to the currency and banking structure. When government revenue exceeded disbursements, currency in circulation and bank reserves were reduced. Contrariwise when the government incurred deficits, currency in circulation and bank reserves were increased. The effects were irregular in occurrence and produced violent dislocations in the money market. Efforts to modify the Independent Treasury System under the National Banking Act by a partial distribution of the public moneys among national banks resulted in charges of discrimination and favoritism in the treatment of different banks.

5. *Recurring crises.* The various defects of the National Banking System were highlighted by numerous financial crises. Thus, in 1873, 1884, 1893, and 1907 there were serious panics. In addition, other periods were characterized by serious credit stringencies. The patterns of these crises were quite similar. Prices were high, banks were loaned-up, and curtailment of lending was necessary. If the public started to convert deposits into currency, the banks were often forced to suspend convertibility of deposits into currency. Then all the attendant characteristics of a depression set in. In some ways the

panic of 1907 so aroused the public that passage of the Federal Reserve Act was made possible politically.

■ CENTRAL BANKING BEFORE THE FEDERAL RESERVE SYSTEM

Because of the emphasis placed upon the establishment of a central bank in the United States with the organization of the Federal Reserve System in 1914, it is often forgotten that the First and Second Banks of the United States performed most, if not all, of the functions conducted by a modern central bank. They held the funds of the government, lent money to it, and aided in the sale of bonds and other fiscal functions. Moreover, these banks attempted to provide a national currency of uniform value by issuing their own notes and presenting state bank notes for redemption in order to prevent their overissue. The banks fought for sound government fiscal policy and attempted to stabilize domestic exchange rates and interest rates by providing mobility of funds. Between the demise of the Second Bank of the United States in 1836 and the establishment of the Federal Reserve System in 1914, no formal central bank existed but various haphazard methods made possible the performance of some central banking services.

While the establishment of the Independent Treasury System was designed to remove the Treasury from contact with banks, the alternate accumulation and release of part of the specie reserves of the banks by the Treasury badly disorganized the money market and forced the Treasury to concern itself with the effects of its fiscal operations on the banks. When some of the banks were short of cash, the Treasury often attempted to furnish relief by shifting its deposits either from its store of cash or from other banks to the troubled area. In time of crisis the Treasury sometimes purchased its bonds for retirement in order to supply the banking system with cash. The Treasury, however, did not perform these functions with any regularity; more often than not, the allocation of public funds among the banks was in response to political conditions rather than the needs of the banks and the community.

Other central banking services arose from interbank relations. The growth of correspondent banking was the joint product of the legal reserve requirements of the National Banking Act, the prohibition of branch banking, and the lack of central banking facilities. Banks in the larger centers had to act in a dual capacity as ordinary banks to meet local business demands and—as central banks—to serve other banks. But they failed to assume either the responsibili-

ties or the leadership of central banks, as was tragically apparent in the crises of 1873, 1893, and 1907, when specie payments were suspended and business activity was badly disorganized. Clearing houses, which were organized in many cities, also succeeded in rendering some central banking services. They supplied an efficient mechanism for clearance and collection of checks and other cash items. Also in times of crises the clearing houses issued certificates and checks to the banks; while these certificates were not part of the banks' reserves, their use either as currency or to settle balances with the clearing house released a corresponding amount of cash for other uses by the banks.

Thus, in the period between 1836 and 1914 various arrangements were developed to provide some of the functions of a central bank. At best these substitutes were very much in the nature of makeshift arrangements and none of them compensated for the absence of a genuine central bank.

QUESTIONS AND PROBLEMS

1. a. The central bank is termed a "lender of last resort." Explain.
 b. It is said that central bank credit policy must be divorced from earnings. Explain the significance of this statement.
 c. Should the same "code of behavior" apply to a central bank as to a commercial bank? Why or why not?
2. a. Why in the early days was there so much popular enthusiasm for bank loans based upon land?
 b. Why did the early banks making commercial loans succeed so much better than did the land banks?
3. a. Many who had opposed the recharter of the First Bank of the United States within a few years favored the chartering of the Second Bank. Why?
 b. Both United States banks were feared by the "small man with big votes." Explain.
4. a. "The best way to diffuse banking in a community is to allow the banker to issue bank notes of small amount that can supersede the metal currency. This amounts to a subsidy to each banker to enable him to keep open a bank till depositors choose to come to it." (*W. Bagehot, Lombard Street*, 14th ed., London, 1915, p. 82.) In the light of American experience, was this method successful?
 b. "In the infancy of Banking, it is probably much better that a Government should as a rule keep its own money." (*Ibid.*, p. 99.) Evaluate in the light of American experience both prior and subsequent to the establishment of the Independent Treasury.
 c. "The natural system of banking is that of many banks keeping their own cash reserve, with the penalty of failure before them

if they neglect it." (*Ibid.*, p. 310.) Is this the presently accepted view?

5. "The principal drawback about 'free banking' is that it is sometimes not safe banking." (W. R. Burgess, *The Reserve Banks and the Money Market*, 2d ed., New York, 1946, p. 24.)
 - a. Is free banking superior to special charter banking? Why?
 - b. How can you explain the rise of free banking in the United States?
6. a. Contrast the systems of note issue used by the Suffolk, Safety Fund, and Free banking systems.
 - b. Trace the antecedents of the principal features of the National Bank Act in earlier state systems.
 - c. Account for the change in the relative importance of national and state chartered banks from 1870 to 1913.
7. a. Point out the leading improvements in banking introduced by the National Bank Act when it was passed.
 - b. Were any of them regarded as defects in 1910? Which, and why?
8. a. Distinguish between "central bank" and "central banking."
 - b. To what extent was there central banking in the United States before 1913?

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The Structure and Service Functions of the Federal Reserve System

THE defects of the National Banking Act prompted many proposals to reform the monetary and banking structure in this country. The panic of 1907, which resulted in widespread bank failures, the suspension of gold payments, and a serious business depression, aroused public interest in the need for drastic reform of our financial machinery. The Aldrich-Vreeland Act of 1908 which provided for temporary issues of emergency currency by groups of national banks, sought also to provide the groundwork for reform of our banking system. A National Monetary Commission was appointed to carry out an extensive investigation of our banking system before 1910. The Commission, which was dissolved in 1912, prepared a bill commonly known as the Aldrich Plan.

The Aldrich Plan provided for the formation of a National Reserve Association located in Washington, D. C., and capitalized at \$300 million. The association was to have a branch in each of fifteen districts into which the country was to be divided. The member banks (national, state, and trust companies) were to subscribe to stock in the association. More important, however, than the administrative organization were the powers of the association. It was to serve as the fiscal agent of the government; it could rediscount paper for its members; it could hold deposits of its members without

interest; it was to deal in government bonds in the open market; it could issue notes against security that was part gold and part commercial paper. The Aldrich Plan was defeated in Congress, when introduced, in 1912 and was a controversial issue in the presidential election in that year. The Democrats, who represented themselves as the party of the small merchants and the people, opposed a central bank which could be dominated by a few eastern bankers. They were victorious in the elections in 1912. Fortunately, the zeal for banking reform did not die with the change of administration. The new administration differed not on the need for reform but on the kind of banking reform. President Wilson pressed for legislation, and on December 23, 1913, the Federal Reserve Act became law. The first Federal Reserve Board, however, did not take office until August 10, 1914.

■ STRUCTURE OF THE FEDERAL RESERVE SYSTEM

In the discussions of legislation to reform the banking and monetary system in 1913 varying opinions were expressed as to the degree of centralization and decentralization that should be enacted into the new bank reform bill. Some authorities favored autonomous central banks in various districts throughout the country. The case for a decentralized system was based upon the following observations: (1) The United States encompassed a vast geographic area consisting of many regions each of which had unique *economic characteristics and needs*. It was felt, therefore, that a single central bank would not serve the diverse regional interest as well as a system of autonomous regional central banks. (2) Fear was expressed that a single central bank would fall under the domination of a few large eastern banks. The phantom of the "money powers of Wall Street" was a potent political weapon to oppose a single central bank. (3) In addition, many feared that a single central bank would come to be dominated by the federal government. At the other extreme, were those who favored a single central bank in the interest of uniformity of bank regulation throughout the country and consistency of monetary policy.

The structure of the Federal Reserve System represents a compromise of the varying opinions as to the appropriate degree of centralization in the central banking system. Unlike most foreign central banks this country has not one but twelve central banks. These twelve banks were to be run by representatives of commerce, agriculture, and industry from the respective regions. Representatives of the general public were to be in the minority in each of the

regional banks. While each Federal Reserve bank is a legal entity, the banks were welded together tightly and it is entirely correct to describe the Federal Reserve System as a *central banking system*. The organization of the Federal Reserve System comprises five agencies or groups of agencies which will be examined in turn:

1. The Board of Governors.
2. The Federal Open Market Committee.
3. The Federal Advisory Council.
4. The Federal Reserve banks and their branches.
5. Member banks of the Federal Reserve System.

The Federal Reserve Act itself has been amended on numerous occasions. Among the more important amendments, aside from the wartime changes of June 21, 1917, are the comprehensive Banking Act of (June 16) 1933 and the equally extensive Banking Act of (August 23) 1935. The former left unchallenged the basic function of the Federal Reserve System—to act as a commercial banking system—but sought to strengthen the System's control over attempted diversion of funds to speculative and investment use. It provided also for deposit insurance. The Banking Act of 1935, however, made more fundamental changes. It virtually discarded the distinction between commercial and investment credit. Permission was granted to the Reserve banks to lend reserve bank credit on any type of asset which the commercial banks possessed. The 1935 Act also gave the Board of Governors new strength at the expense of the regional Reserve banks. Moreover, the immediate links between the government and Federal Reserve System were strengthened, permitting the government to exercise more influence over the System. In the following description of the structure and functions of the Federal Reserve System, only occasional references will be made to historical developments; the focus of our attention will be the present structure of the System.

BOARD OF GOVERNORS

The Board of Governors of the Federal Reserve System is composed of seven men, each of whom is appointed by the President of the United States subject to confirmation by the Senate. In the selection of members of the Board the President may choose no more than one from any Federal Reserve district and must attempt to secure a suitable representation of different parts of the country and of the nation's financial, agricultural, industrial, and commercial interests. Each member serves for 14 years and is ineligible for reappointment after serving a full term. The term of

one member expires every 2 years. Each member receives a salary of \$16,000 a year, in return for giving his entire time to the service of the Board. No member may have any connection with a bank or trust company during his term of office whether as employee, officer, director, or stockholder. Members who have served a full term may become connected with a member bank as soon thereafter as they choose, but those who withdraw before the expiration of the 14 years are required to wait 2 years before they may establish such a connection. The chairman and vice-chairman, the executive officers of the Board, are chosen by the President to serve a 4-year term. This provision was designed to afford a new President the opportunity to designate a chairman and vice-chairman. This has not worked in practice since it has not been possible to make appointments so that they would coincide with the term for which the President is elected. All of these stipulations were directed towards continuity of policy, avoidance of "packing" by a single administration, and prevention of domination by one group over a long period.

Originally the Board was assigned the task of coordinating the activities and policies of the several Federal Reserve banks. While preserving local autonomy and safeguarding local interest, the Board was to ensure national unity in matters of broad major policy. It is the principal spokesman of the Federal Reserve System, which is charged with the responsibility of regulating the stock, availability, and cost of money in the public's interest. Although the Board's control over the System was enhanced by the Banking Act of 1935, its duties remain largely supervisory and regulatory. Since the act in general sets forth only the broad outlines of the System, the responsibility of interpreting and supplementing the legislation falls upon the Board.¹ Its principal duties are listed below:

1. To regulate general credit policy
 - a. To review and determine the discount rates of Federal Reserve banks and if necessary to require that changes in rate be made oftener than once in 14 days.
 - b. To permit rediscounting between Reserve banks and to fix the rates therefor.
 - c. To control open-market operations through majority representation on the Federal Open Market Committee, whose decisions must be carried out by the Reserve banks.
 - d. To determine the character of paper eligible for rediscount and open-market purchase by Reserve banks and to prescribe conditions under which credit may be extended to member banks.

¹ The Board's *Regulations* lay down general policies, while its *Rulings* (and the opinions of its counsel) apply the act and *Regulations* to particular situations.

- e. To determine the character of ineligible paper acceptable for advances to member banks.
 - f. To suspend reserve requirements for 30 days and to renew the suspensions for 15-day periods, upon payment of a graduated tax on the deficiency in reserves.
 - g. To change member bank reserve requirements, but neither below nor more than double those in force prior to 1935.
 - h. To regulate, at its discretion, issuance of Federal Reserve notes to the Reserve banks.
 - i. To regulate margin requirements on securities registered on a national securities exchange.
 - j. To set for each district the percentage of a member bank's capital and surplus which may be represented by loans on stock and bond collateral.
 - k. To regulate consumer credit by specifying minimum down payments and maximum maturities for installment sales of certain listed articles. This temporary control expired in June 1952.
 - l. To regulate under specified conditions real estate credit on new home construction by specifying minimum down payments and maximum maturities.
 - m. To suspend from enjoyment of Federal Reserve credit facilities member banks making undue use of bank credit for speculation or for the creation of unsound credit conditions, and to suspend from rediscount privileges for as long as one year a member bank that refuses to refrain from increasing its loans on stock and bond collateral.
2. To supervise Reserve bank operations
- a. To examine Reserve banks and require from them reports and publication of weekly statements of condition.
 - b. To approve the appointment of a president and first vice-president of each Reserve bank.
 - c. To select the Class C directors of each Reserve bank and the Federal Reserve agent.
 - d. To approve salaries paid by Reserve banks.
 - e. To suspend or remove Reserve bank officers and directors for due cause.
 - f. To require Reserve banks to write off worthless or doubtful assets.
 - g. To suspend operation of a Reserve bank, liquidate it, or reorganize it.
 - h. To require bonds of Federal Reserve agents and regulate their safekeeping of money and property.
 - i. To supervise all relationships and transactions of Reserve banks with foreign banks.
3. To regulate certain member bank operations
- a. To admit members into or expel them from the System.
 - b. To examine state member banks and their affiliates and receive reports from them.

- c. To determine the character of bills members may accept.
- d. To permit member banks to accept up to 100 percent of capital and surplus.
- e. To permit state member banks to establish branches.
- f. To permit national banks to exercise trust powers.
- g. To authorize foreign branches and investment in stock of foreign banking corporations, and formation of such corporations.
- h. To pass upon interlocking directorates and voting of bank stock by holding company affiliates.
- i. To limit the rate of interest paid by member banks on time deposits.
- j. To remove officers and directors of member banks for continued violation of the banking laws or for continued unsafe or unsound banking practices.

In addition, the Board may act as a clearing house for the Reserve banks and may readjust the boundary lines of Federal Reserve districts as well as reclassify reserve and central reserve cities. Through its annual report to Congress and its issue monthly of the *Federal Reserve Bulletin*, as well as its press releases, the Board acquaints the public with the activities of the System. Since its inception, the Board's expenses have been met by assessment on the Reserve banks in proportion to their capital and surplus.

The chairman of the Board is a member of the National Advisory Council on International Monetary and Financial Problems which serves to coordinate the work of governmental agencies in the field of international finance.

THE FEDERAL OPEN MARKET COMMITTEE

As we shall see later, one of the most powerful instruments for controlling the supply, availability, and cost of money is the Federal Reserve System's power to engage in purchases and sales of securities in the open market. During the early years of the System each bank used its own discretion in engaging in open-market operations. The result was that individual Reserve banks sometimes pursued conflicting policies. The attempts in the 1920's and early 1930's to set up an informal committee consisting of representatives of the Federal Reserve banks were only partially successful in achieving uniform action by the System. In 1935 the present Committee on Open Market Operations was established, and its powers were written into the statutes.

The Open Market Committee consists of twelve members; seven of these are members of the Board of Governors of the Federal Reserve System and five are representatives of the Reserve banks.

The latter are elected annually by the boards of directors of the Reserve banks and must be either presidents or vice-presidents of the Reserve banks. The Reserve bank representatives are distributed as follows:

One from the Federal Reserve Bank of New York.

One from the Federal Reserve Banks of Boston, Philadelphia, and Richmond.

One from the Federal Reserve Banks of Cleveland and Chicago.

One from the Federal Reserve Banks of Atlanta, Dallas, and St. Louis.

One from the Federal Reserve Banks of Minneapolis, Kansas City, and San Francisco.

This Committee has the responsibility of deciding how large the open-market operations of the System are to be and the conditions under which the operations are to be undertaken. The Committee's decisions are final and can no longer be rejected by an individual Reserve bank as had been the case previously. Thus, the machinery for handling open-market operations of the Reserve banks provides a coordinating element in the System. It should be evident, however, that the existing arrangement divides authority over instruments of credit policy between the Board of Governors and the Federal Open Market Committee. No doubt, the present control over open-market operations represents a continued effort to maintain the regional character of the Federal Reserve System.

FEDERAL ADVISORY COUNCIL

The Federal Reserve Act of 1913 created an advisory council consisting of one member from each district to be selected annually by the board of directors of each Reserve bank. The Federal Advisory Council is required to meet in Washington at least four times a year (oftener, if called by the Board) and elsewhere on other occasions as it wishes. It elects its own officers and determines its own procedure. As its name implies, the Council's function is purely advisory. It confers with the Board on general business conditions, makes representations concerning matters within the Board's jurisdiction, obtains information, and makes recommendations on specific aspects of banking and credit policy and the general affairs of the System.

The Council was devised when the original plan for a self-governing system was abandoned and a presidentially appointed Federal Reserve Board was provided for instead. Its members have usually been prominent local bankers who have accepted office pri-

marily on an honorary basis. Some authorities have urged revision of the statutes to provide that an individual shall not be eligible to serve as a member of the Council for more than three full consecutive calendar years. The desirability of rotation has been recognized in resolutions of the Council and of the chairmen of the Reserve banks. The directors of the Reserve banks, however, have not acted to put the rotation suggestion into effect.

Two bodies not specifically created by law have developed within the System to aid in formulating policy and in coordinating the operations of the Reserve banks. One is the Conference of Presidents of the Federal Reserve Banks (formerly called Conference of Governors), which meets by itself and with the Board at least three times a year, and the other is the Conference of Federal Reserve Agents, which meets once a year.

FEDERAL RESERVE DISTRICTS AND BANKS

In view of the strong prejudice against the "concentration of the money power" in this country, the framers of the Federal Reserve Act attempted to establish a decentralized central banking system. The Federal Reserve Act provided that the country was to be divided into not less than eight nor more than twelve districts by a Reserve Bank Organization Committee composed of the Secretary of the Treasury, the Secretary of Agriculture, and the Comptroller of the Currency. After careful investigation and public hearings, the committee decided upon twelve districts differing widely in population, geographical area, banking resources, and volume of business transacted (see Table 31). The Committee also designated the cities which were to serve as headquarters for the Federal Reserve banks established in each district. Figure 19 depicts the boundaries of the districts and the location of Federal Reserve banks and branches.

Each Federal Reserve bank set up within a district is a corporation chartered by the federal government. The charters of these banks originally were to run for 20 years. In 1927 they were made indeterminate, to continue in force until annulled by act of Congress or for violation of the law. The Federal Reserve Act required each Reserve bank at the time of its organization to have a minimum subscribed capital of \$4 million divided into shares of \$100 par value. The stock is subscribed by the member banks within each district in an amount equal to 6 percent of their own capital and surplus; stockholding is adjusted currently in accordance with changes in the member bank's capital and surplus. Only one half

TABLE 31

SALIENT DATA WITH REFERENCE TO FEDERAL RESERVE DISTRICTS,
DECEMBER 30, 1951

Federal Reserve district	Total assets of Federal Reserve bank (000,000 omitted)	Land (square miles)	Estimated population April 1, 1950 (000 omitted)
1. Boston	\$ 2,811.5	62,573	8,753
2. New York	13,276.3	52,153	18,945
3. Philadelphia	3,001.3	37,023	8,412
4. Cleveland	4,232.2	74,027	12,968
5. Richmond	2,940.3	152,471	14,338
6. Atlanta	2,540.0	247,778	14,586
7. Chicago	8,620.6	190,446	22,061
8. St. Louis	2,067.6	195,902	10,421
9. Minneapolis	1,216.5	412,304	5,705
10. Kansas City	2,126.6	480,537	8,263
11. Dallas	1,918.8	386,447	9,071
12. San Francisco	5,148.1	685,438	16,333
Total	\$49,899.8	2,977,099	149,856

(3 percent) of each subscription has been paid up thus far and the other half remains subject to call. The original act authorized sale of Reserve bank stock to the Treasury and the general public if such sales were necessary to supply each Reserve bank with the minimum capital required. Since subscriptions of the member banks were adequate, no deficiency remained to be supplied by the public or the government.

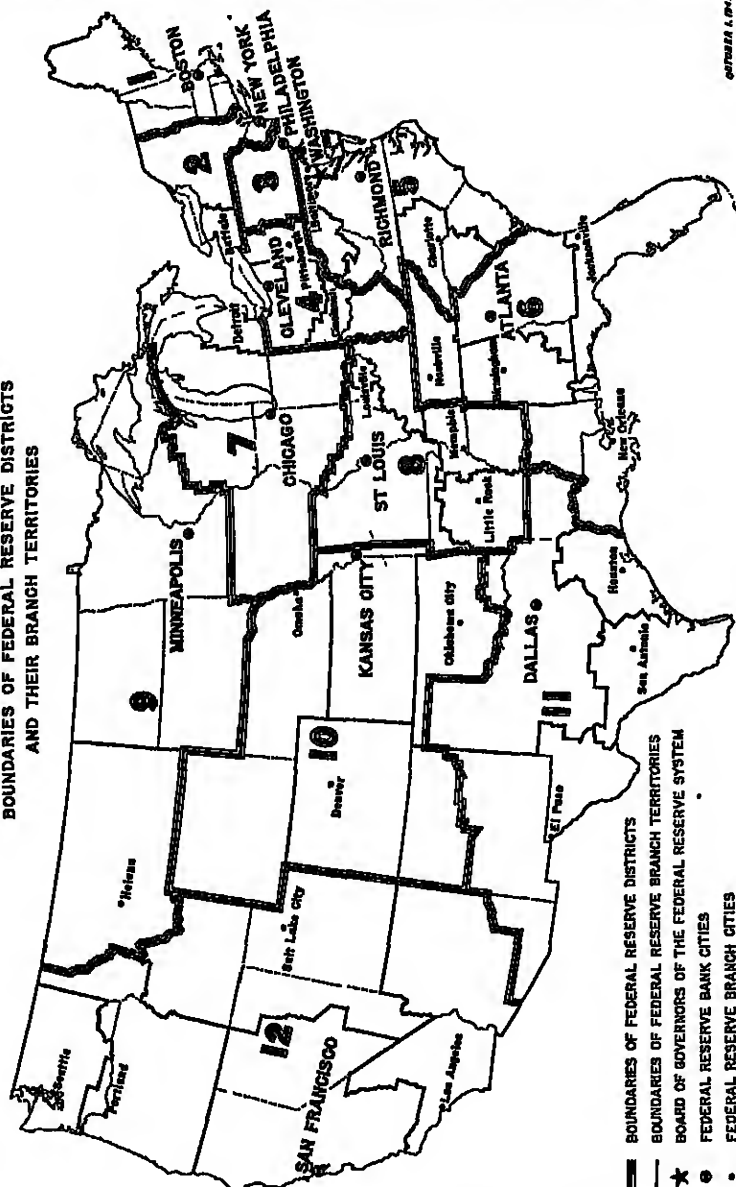
The public character of the Reserve banks is evident in the provisions both for the distribution of their earnings and for their administration. While the capital stock of the Reserve banks is owned by the member banks and they receive a fixed statutory dividend on these shares, the Federal Reserve Act prescribes the ownership of this stock and the organization and operation of the Reserve banks in such a manner that the relationship of the stockholders to the Reserve banks is markedly different from that ordinarily existing between a corporation and its stockholders.

Federal Reserve banks are operated for the general welfare, not for the purpose of making a profit. In the course of their operations, however, the banks do earn income. Member banks are legally en-

FIGURE 19

FEDERAL RESERVE SYSTEM

BOUNDARIES OF FEDERAL RESERVE DISTRICTS AND THEIR BRANCH TERRITORIES



titled merely to a 6-percent cumulative dividend on their paid-in stock. The Federal Reserve Act of 1913 provided for the payment by the Reserve banks of a portion of their net earnings to the Treasury as a franchise tax. As amended in 1919, the act provided that all net earnings after dividends should be carried to surplus until it was equal to the subscribed capital (twice the paid-in capital) of the Reserve banks. Thereafter, 10 percent of net earnings in excess of dividends should be carried to surplus, and the remainder should be paid to the Treasury as a franchise tax. The Banking Act of 1933 required the Reserve banks to use one half of their accumulated surplus to purchase nondividend paying stock of the FDIC.² This provision reduced the surplus by \$139 million, and Congress, therefore, included a provision in the same act eliminating the franchise tax on Reserve banks in order to permit them to restore their surplus accounts. On June 19, 1934, however, the Treasury was directed in a complicated plan to restore part of the lost surplus to the Reserve banks as they made industrial advances. Today, therefore, the Reserve banks show two kinds of surplus—the one (section 7) representing earned surplus and the other (section 13b) representing the sum returned to them by the Treasury, as adjusted. At the end of 1946 the combined surplus of the Reserve banks was slightly under \$5 billion, and the Board of Governors concluded in 1947 that it would be appropriate for the Reserve banks to pay to the Treasury the bulk of their net earnings. It, therefore, invoked the authority granted it by the act to levy an interest charge on Federal Reserve notes issued to the Reserve banks and not covered by gold certificate collateral. The interest charge established by the Board on such notes equals approximately 90 percent of the net earnings after dividends of each Federal Reserve bank. Since January 1, 1947, the Reserve banks have been paying into the Treasury about 90 percent of their net earnings after dividends.

The public nature of the Reserve banks is well illustrated by the character of their directorates. Each Reserve bank is governed by a board of nine directors, six of whom are elected by the member banks and three appointed by the Board of Governors for 3-year terms. Of the six elected by member banks, three (the Class A directors) are bankers representing the member banks of the district, while the other three (the Class B directors) must be actively engaged in commerce, agriculture, or industry. The remaining three (the Class C directors) are appointed by the Board of Governors and represent the general public. Neither the Class B nor the Class C

² The stock was later retired by the FDIC which paid \$139 million to the Treasury.

directors may maintain any other banking connections while they serve as directors. The Class A and Class B directors are elected according to a special plan designed to insure fair representation: the member banks are divided into three size groups on the basis of capitalization and each group then elects one Class A and one Class B director. Unfortunately, member banks have all too frequently been apathetic in the election of directors.

Of the three Class C directors, one (a man of tested banking experience) is designated by the Board as chairman and Federal Reserve agent. The officers of each Reserve bank are selected by the board of directors. Under the Banking Act of 1935 the title of "governor" was changed to "president," and it was provided that this officer and the first vice-president should be selected by the board of directors for 5-year terms, subject to the approval of the Board of Governors.

BRANCHES

In order to make Federal Reserve facilities more readily available in all parts of the country, to permit collections and other services to be expedited, and to avert local jealousy against a Federal Reserve city, branches of the parent Reserve banks have been established. The Federal Reserve banks began to establish branches as early as 1915 (New Orleans), and there are now twenty-four functioning. They are allocated a definite territory (shown in Figure 19, page 276), and most of them perform for their assigned members all the services that are made available by the Reserve bank. The five branches with limited powers hold no deposits and may be required to forward to the parent bank for approval all paper offered for rediscount. Each branch is administered by a board of directors of not more than seven nor less than three residents of the territory served. A majority are appointed by the parent Reserve bank and a minority by the Board of Governors.

MEMBERSHIP

For its membership the Federal Reserve System was given a permanent nucleus—consisting of the national banks—whose affiliation was made compulsory and a group of state-chartered institutions whose membership was voluntary. State banks and trust companies, excluded in early drafts of the act, were admitted at their request upon broad compliance with the requirements made of national banks. Since 1933 mutual savings banks and Morris Plan

banks have been admitted to membership. Private bankers have been consistently barred from membership.

In order to be accepted as members, state banks must obtain the approval of the Board, which considers the financial history and condition of the applicant and the general character of its management, the adequacy of its capital structure and earnings, the convenience and needs of the community served by it, and whether its corporate powers are consistent with the purposes of the Act. The existing law provides that a state bank to be admitted to membership in the Federal Reserve System must have a capital stock and surplus adequate in the judgment of the Board of Governors in relation to its assets and its deposits or that it must be approved for federal deposit insurance if it does not meet the same minimum capital stock and surplus requirements as a national bank.³

While it is a member of the System, a state bank retains its full charter and statutory powers, with certain limitations. It must refrain from lending on or buying its own stock, impairing its capital, or paying unearned dividends. It is subject to penalties for deficiencies in reserves, is forbidden to overcertify checks, and is required to handle at par local items sent to it by the Reserve bank. It must hold all legal reserves behind its deposits in the form of deposits at the Federal Reserve bank of its own district. It cannot act as an investment banker, either directly or indirectly, and is restricted in the handling of trust funds and in the establishment and maintenance of domestic or foreign branches. Its officers and employees are subject to the national bank statutes covering penal offenses. It (and its affiliates) must make reports to the Reserve bank and submit to examinations by it, a provision which the Board has tried to carry out with a minimum of duplication. Cordial relations with member banks have been fostered by the Reserve banks, which have absorbed many of the expenses incurred in serving their members. In the event a state bank wishes to withdraw from membership in the System, provision is made for redemption of its Reserve bank stock and the return of its deposits.

Throughout its history the Federal Reserve System has comprised a minority of the total number of banks in the country (Table 32). Member banks, however, have accounted for a majority of all deposits at commercial banks. At the end of 1951 there were 6,837 member banks, of which 4,939 were national banks and 1,898 were state banks. Nearly 50 percent of all commercial banks holding about 86 percent of all deposits at commercial banks were members of the

³ See Ch. 7, pp. 151-152.

TABLE 32

COMMERCIAL BANK MEMBERSHIP IN THE FEDERAL RESERVE SYSTEM,
1915-1951

End of year	Number of commercial banks	Members of Federal Reserve System			Member banks as percent of all commercial banks	Member bank deposits as percent of deposits in all commercial banks
		Total	National	State		
1915	25,875	7,615	7,598	17	29.0	49.0
1920	29,087	9,399	8,025	1,374	32.0	70.0
1925	27,858	9,538	8,066	1,472	34.0	73.0
1930	23,251	9,315	7,247	1,068	40.0	73.0
1935	15,478	6,410	5,425	985	41.0	85.0
1940	14,404	6,398	5,164	1,234	44.0	86.0
1945	14,011	6,884	5,017	1,867	49.0	87.0
1951	14,089	6,837	4,939	1,898	48.5	85.5

NOTE: In addition to the commercial bank members shown, 3 mutual savings banks have been members since 1941. The commercial bank figures include stock savings banks and nondeposit trust companies.

SOURCE: *Banking and Monetary Statistics* and *Federal Reserve Bulletin*.

Federal Reserve System. The 7,252 nonmember state banks were, on the average, small banks as is evident by the fact that they held only about 14 percent of all deposits at commercial banks.

Both the act and the Board of Governors favor a large membership for many reasons. First, the Federal Reserve System cannot control effectively the nation's monetary stock if it exercises relatively weak controls over half the banks of the country. Second, the greater the resources contributed by their members to the Reserve banks, the stronger and more powerful the System will be. Third, the broader the membership, the greater will be the service to the community. Finally, the more widespread the membership, the stronger will be the encouragement to sound banking practice. So long as it is solvent, sound, and reasonably well managed, each additional member bank thus provides added strength to the System.

There are numerous reasons why so many state banks have failed to join the Reserve System. Many state banks which are otherwise entitled to membership in the System cannot join because of their inability to meet the minimum capital requirements. The System's restrictions on lending and investing activities are generally narrower than those imposed by state authorities. State banks not join-

ing the System may be subject to lower reserve requirements and may be permitted to count as legal reserves both vault cash and deposits with correspondent banks. For many banks the most serious objection to becoming a member bank is the par clearance provision which prohibits a member bank from levying a charge to cover the cost of providing cash at some distant point to pay for checks drawn against itself. Moreover, many services are available from the Reserve System without membership. Within certain limitations nonmember banks may use the Federal Reserve clearing system, borrow from the Reserve banks and utilize other Federal Reserve facilities. Indirectly, through their correspondents, nonmembers have been able to obtain the benefit of membership without assuming either the responsibility or the cost of membership. The result is a twofold central banking mechanism in the United States—the first composed of the twelve Reserve banks and their member banks and the second consisting of city member banks and their nonmember bank correspondents. The latter is supported by, but not subject to direct control by, the former.

There is active debate about compelling all commercial banks to join the Federal Reserve System and insisting that the nonmembers should be forced, upon joining, to meet the requirements of Federal Reserve membership. In some quarters it has been proposed to confine the chartering of commercial banks to the federal government. Since all banks would be national banks, they would become members of the Reserve System automatically. The proposal to prohibit state chartering of commercial banks is of doubtful constitutionality. Moreover, Congress has shown great reluctance in the past to interfere with the states' rights to charter banks. In order to encourage increased voluntary membership in the System, the spokesmen of the Board of Governors have urged the passage of legislation requiring a specific minimum capital requirement of \$50,000⁴ for admission to membership in the System. A bank with this minimum capital could apply for membership in the System. The Board would then consider the adequacy of a bank's capital structure among the factors weighed in passing upon the application for membership in the Federal Reserve System. This proposal would make it easier for nonmember banks to join the Reserve System. It should be clear, however, that many banks eligible to join might not do so. Moreover, hundreds of banks would still not be able to meet the reduced minimum capital requirements. Since many state banks would not

⁴ A bank organized prior to the passage of the proposed legislation might be admitted with a minimum capital of \$25,000.

or could not join the System, the effectiveness of Federal Reserve credit control would be narrowed.

In order to enhance the effectiveness of Federal Reserve policies, both the chairman of the Board of Governors and a Congressional subcommittee have proposed (1) that all banks (or at least all insured banks) accepting demand deposits should observe the same reserve requirements irrespective of whether they are member banks or nonmember banks and (2) that all such banks should be given access to the discount and loan facilities of the Reserve banks. Such legislation, it is argued, would not interfere with the states' rights to charter and supervise banks. The dual banking system of member banks and nonmember banks would be continued. It would eliminate competition in laxity with respect to reserve requirements. Presumably it would remove the danger that the relative competitive advantages of membership as compared with nonmembership in the Reserve System would affect the aggregate money stock of the country and weaken the power of the Reserve authorities to control the money stock. Granting access to Federal Reserve credit to all banks would serve the useful purpose of providing liquidity to nonmember banks in times of stress.

■ SERVICE FUNCTIONS OF THE RESERVE SYSTEM

Having described the structure of the Federal Reserve System, we turn next to the service or "chore" functions which it performs. These functions utilize the major share of the human and physical resources of the System and are important in facilitating the effective operation of the monetary and banking system, although they are not of major importance in determining the size of the community's money stock.

SUPERVISION

The Federal Reserve Act placed upon the Board of Governors and the Federal Reserve banks the responsibility of supervising and examining the member banks. The Reserve System's task of supervision is shared with others. Federal activities in chartering and examining commercial banks are shared by the Comptroller of the Currency, the Federal Reserve System, and the Federal Deposit Insurance Corporation.

Supervision of national banks is vested in the Comptroller of the Currency, who is appointed by the President with the consent of the Senate for a term of 5 years. The Comptroller passes upon

applications for charters for new national banks, mergers, etc. He oversees the issue (to the Federal Reserve agents) and retirement of Federal Reserve notes, calls for reports from national banks, and appoints examiners for national banks. Since 1933 the Comptroller has served as a director of the FDIC.

In addition to the main office at Washington, there is in each of the twelve Federal Reserve districts a chief national bank examiner who supervises the field force in his district. The Comptroller is required by law to examine every national bank (at its expense) twice in each calendar year, or more often if he deems necessary. The aims of the examination (made without prior notice to the bank) are (1) to appraise assets and determine solvency, (2) to detect violations of law by the bank and its staff, including defalcations, and (3) to discover unsafe and unsound tendencies and policies. A copy of each report of examination is furnished to the Reserve bank and to the bank examined.

The examinations made by the Comptroller are limited to national banks. State banks and trust companies are subject to such examinations as the state law requires. For banks which are members of the Federal Reserve System, the Federal Reserve banks may accept the examination made by the Comptroller or state supervisor or may instead, with the approval of the Federal Reserve agent or the Board of Governors, call for special examinations by examiners selected or approved by the Board of Governors to inform the Reserve bank of the condition of its members and the lines of credit extended by them. In practice, the Federal Reserve banks have merely investigated special points of weakness or unsound practice disclosed by the national bank examiner's report; for the most part they have examined state member banks jointly or alternately with state bank examiners.

The creation of the FDIC introduced a new element of complexity in the supervision of commercial banks. The FDIC examines national banks (with the consent of the Comptroller), state member banks (with permission from the Board of Governors), and state banks (jointly or alternately with the state authorities), which are insured or apply for deposit insurance. It may also examine any closed insured bank.

Reports provide a valuable adjunct to examinations. National banks must make not less than three reports each year to the Comptroller. At his request a report of condition on a specified past date must be transmitted within 5 days, under penalty of fine, and must be published in abbreviated form in a local newspaper. At the time of declaration each bank is also required to report each dividend

declared and the amount of net earnings in excess of dividends. The Comptroller may require further reports for special purposes. State member banks are required on call of the Board of Governors of the Federal Reserve System to report not less than three times a year to their district Reserve bank on their condition and also to report the payment of dividends. In addition, banks have been increasingly required to assemble data for reports of all kinds—for congressional committees, for example, and for cases prosecuted by the government in the courts. In 1938 a uniform report form was prepared by the three federal agencies and approved by the executive committee of the National Association of Supervisors of State Banks.

Owing to voluntary agreements among the three federal bank supervisory agencies and the forty-eight state supervisory authorities, there is less confusion and duplication of effort than might be expected from such overlapping jurisdictions.⁵ The quality of bank supervision has improved steadily over the years. Not only have the federal bank supervisory agencies provided more competent examinations in fields heretofore uncovered and raised the standard of examinations in all fields, but they also have set a model or uniform pattern for state legislation.

The current status of supervision, nevertheless, leaves much to be desired. Overlapping jurisdictions create many problems. Promotion of the development of uniform supervision and examination policies is hampered; some evidence exists to indicate that on occasion the different agencies have been guided by different concepts as to the purpose of bank supervision and examination. Consolidation of supervisory agencies would simplify the problem and reduce expense by eliminating duplication. This is a particularly important consideration because many examining staffs are undermanned. Another point in favor of a merging of this work with that of the Federal Reserve authorities or the Federal Deposit Insurance Corporation is the fact that these bodies require supervisory machinery for the repression and remedy of bad banking and possess greater power to enforce their orders than does a mere supervisor. Finally, it has been suggested that all bank examiners should be placed under civil service and that the rigid examinations now required of some be extended to all new appointments. Salaries sufficiently large to attract and retain high-grade men in the field as well as security

⁵ See the Joint Statement on Coordination of Practices in Fields of Mutual or Joint Responsibility, issued by the Executive Committee of the National Association of Supervisors of State Banks, the FDIC, the Comptroller and the Board of Governors, *Federal Reserve Bulletin*, August 1952, pp. 877-881.

of tenure may well improve the caliber of bank examinations in the more backward areas.

FISCAL FUNCTIONS

According to section 15 of the Federal Reserve Act, the Federal Reserve banks "when required by the Secretary of the Treasury, shall act as fiscal agents of the United States, and the revenues of the government or any part thereof shall be deposited in such banks, and disbursements may be made by checks drawn against such deposits." These powers were first used in 1916; by 1920 the subtreasuries were finally discontinued and their remaining duties were given over to the Reserve banks. Today the United States Government is the largest customer of the Reserve banks; before 1921 the Treasury reimbursed these banks for practically all direct expenses they incurred, but subsequently about half the work done for the Treasury has been carried out without charge and the banks have been reimbursed only for certain specified expenditures.

The Reserve banks perform a variety of fiscal functions for the government. They include:

1. Receiving, holding, and disbursing of government funds. The Reserve banks receive on deposit income taxes, customs, and miscellaneous internal revenue taxes. They pay Treasury checks for salaries, pensions, relief, public works, etc., as well as coupons attached to government bonds. They transfer by wire large sums of money from one part of the country to another for government account through the Interdistrict Settlement Fund to Federal Reserve banks in cities where disbursements are made.

The Reserve banks are not the sole depository of the United States Treasury cash balances. Typically the Secretary of the Treasury maintains a working balance at the Reserve banks and leaves the remainder of Treasury cash balances on deposit with the commercial banks. Checks are seldom drawn upon the commercial bank depositories except to replenish the working balances at the Reserve banks. Federal Reserve banks have never paid interest on government deposits, and other banks were forbidden by the Banking Act of 1933 to pay interest on demand deposits.

2. The Reserve banks buy and sell securities in the market for various Treasury accounts and hold in safekeeping for the Treasury large amounts of securities. They announce new issues of government securities, receive subscriptions and payments, make allotments and arrange conversions. They redeem and exchange securities and are instrumental in the transfer of short-term securities.

3. The Reserve banks are now the sole source outside Washington authorized to replace, exchange, and redeem currency. Not only have they taken over various currency functions formerly performed by the Treasury, but they also have relieved the banks in the larger centers of much of the routine which they formerly conducted for their correspondents.

4. The Federal Reserve banks are required to serve as fiscal agents for various agencies and corporations established by the government, such as the Reconstruction Finance Corporation, the Commodity Credit Corporation, etc.

5. The Reserve banks also perform a host of other services for the Treasury. During, and immediately after, World War II the banks served as intermediaries in arranging the so-called V, VT, and T loans to business firms engaged in war production. The Federal Reserve Bank of New York serves as the government's agency in gold and foreign exchange transactions and also serves as the depository of the International Monetary Fund and the International Bank for Reconstruction and Development.

The services rendered by the Federal Reserve banks as fiscal agents are important primarily because they coordinate Treasury finance with money market conditions. Thus, the Reserve banks have prevented stringency in the money market at tax payment dates through use of their open-market powers, described in Chapter 14. When the Treasury has been engaged in preparing a new issue of government securities, the Reserve banks have not only shared with it the benefit of their contact with the money market, but also have often undertaken to prepare the market for such an issue by insuring adequate ease of funds. The best illustrations of the latter activities of the Reserve System are found in the financing of World Wars I and II. By various means the Reserve System assured the Treasury's success in its bond selling campaigns. While the services performed for the Treasury are frequently very desirable, they do increase the risk that the Reserve System will become subservient to the wishes of the Treasury. By supporting the government bond market after World War II the Federal Reserve System virtually gave up its powers to engage in open-market sales and was, therefore, impotent to prevent increases in bank deposits. When the Reserve System restricted its bond support program in the spring of 1951, government bond prices fell, interest rates rose, and the cost of carrying the Federal debt rose. The Reserve System has not only attempted to aid in the fiscal operations of the government, but it has also aided the money market by cushioning it from the disturbing effects of government financial operations.

CHECK CLEARING AND COLLECTION

As we saw earlier, the principal method of effecting payments in our country is through the medium of checks drawn against demand deposits. When the recipient of the check endorses it and deposits it in his bank, his deposit account is credited, and his bank possesses a check drawn on another bank. In addition to cash items like checks, banks receive from their customers collection items such as promissory notes payable in the future.

If the recipient of a check were always a depositor at the same bank as the drawer, no interbank debts would arise from the use of checks and the technique of debiting one depositor's account, and crediting the account of another depositor would entail merely internal bank administration. In practice, the person receiving a check is rarely a depositor at the same bank as the drawer. The bank on which the check is drawn thus becomes in debt to the bank in which the check is deposited, and for the banking system a large volume of interbank debts arise.

Items payable at other banks can be handled through collection or through clearance. The former device means simply that the item is presented to the bank, which pays for it in cash or the equivalent. Clearance, on the other hand, is the practice of offsetting reciprocal claims against one another so that only the remaining differences are settled. Clearance offers many advantages which collection does not provide. The former is more convenient and economical since it requires less time and effort than collection and tends to conserve the amount of cash tied up in the process of moving between banks. A general measure of the technical efficiency of the banking system is the degree to which items are in fact offset.

Local Clearance—the Clearing House The mechanism for clearing and collecting items on local banks attained a high degree of efficiency many years before the passage of the Federal Reserve Act. The clearing house is primarily an association set up by the banks in a given locality (either a city or a region) to provide facilities for the interchange and settlement of credit claims. Rules and regulations are established to ensure a uniform procedure for the efficient clearing of checks. Each day the banks that are members of the clearing house send the checks and other cash claims payable at one of the other local banks to the clearing house. For the most part, the items consist of checks received by the banks in their previous day's business.

The checks are sorted according to the bank on which they are drawn, and the amounts are totaled and recorded. At the time appointed for clearing, the messengers from each bank go to the clearing house and exchange the packages of checks so that each messenger comes into possession of the checks drawn on his bank. The actual clearing usually occurs about 10:00 A.M., although in some cities the clearing of checks is carried out more than once a day. In addition, large banks frequently exchange checks drawn on each other at more frequent intervals. When this informal clearance takes place, the presenting bank receives a receipt for the total amount of the checks presented; this receipt is put through the clearing house at the regular clearing in the same fashion as a check. At the close of the clearing the proof clerk of the clearing house prepares a statement of the day's operations. The clearance is proved correct if the total items brought to the clearing house equal the total taken away and if the total balances receivable by some banks as a result of the clearing equal the total differences payable by others.

Since the establishment of the Federal Reserve System, many clearing houses use the Federal Reserve banks to settle balances. The manager of the New York Clearing House daily informs the Federal Reserve Bank of New York of the results of the clearings, and the bank in turn credits and debits the accounts which the individual institutions keep on its books. Many other clearing houses use the same method. In cities where there is a Reserve bank branch the settlement of balances is done through it. In certain other cities settlement is made through the Reserve bank even though it is located at some distance. In such instances the manager of the clearing house advises the bank by telegraph of the debit and credit entries to be made. Other methods of settling balances, some of which are still in use, involve either payments by debtors to the manager of the clearing house for distribution to creditor banks or direct payments by debtors to creditors. The payments may consist of actual cash, drafts on correspondent banks in larger centers, or clearing house certificates issued in round denominations and redeemable in cash deposited in vaults under the control of the clearing house.

While the clearing of checks and other items is the primary function of the clearing house, the association also performs a variety of trade association activities designed to increase bank profits and to promote stability of the banking system. Uniform bank charges for services have been fostered by clearing houses. At one time the setting of maximum interest rates paid on deposits by members was

encouraged by some clearing houses. In order to prevent failures among banks, clearing houses in some cases established systematic bank examinations for members and provided leadership and mutual cooperation in times of crisis.

Handling of Items Payable Out of Town The mechanism for clearing and collecting items drawn on out-of-town banks was intolerably inefficient before the facilities of the Reserve banks were made available. The recipient of a check drawn on an out-of-town bank deposited it with his bank which then undertook to collect from the drawee bank. Since the drawee bank often imposed an exchange charge (that is, remitted less than the face value of the check) when a check was presented to it through the mails, it was common practice to send the check to a correspondent bank which acted legally as the agent of the forwarding bank. The correspondent bank receiving the check might in turn pass it on to its correspondent to collect.

The system of check collection through correspondent banks was slow, wasteful, costly, and at times uncertain. Remittance frequently took the form of currency with attendant expense. Checks were routed in a circuitous manner to avoid charges or to build up balances in particular centers. There is a record, for example, of a check drawn on a bank in Sag Harbor, Long Island, New York, and deposited in a bank in Hoboken, New Jersey, 93 miles away. That single check traveled 1,223 miles in 10 days and passed through ten banks other than the drawee. Here is a record of its journey:

	<i>Miles</i>		<i>Miles</i>
To New York City	3	To Far Rockaway	45
To Boston	200	To New York City	20
To Tonawanda	405	To Riverhead	75
To Albany	210	To Long Island City	70
To Port Jefferson	105	To Sag Harbor	90

The system of check collection through correspondents necessitated the maintenance of excessive interbank balances. Finally, loose and dangerous practices developed. When a bank sent out-of-town checks to its correspondent, it normally took credit immediately for the items forwarded even though they might be collected only after a period of time. The longer the checks against any given bank were in the process of collection, the longer it would be before reserves were reduced. The circuitous routing of checks led to the creation of fictitious reserves in two ways: the forwarding bank received the benefit of reserves for deposit expansion before these reserves were

collected and the drawee's bank's reserves were maintained for a longer period than would have been the case if checks were presented directly to it for collection.

Clearing and Collection Under the Federal Reserve System
Despite general recognition and widespread discussion of these weaknesses, there were few actual attempts to reform the clearing and collecting mechanism for out-of-town items before 1913. Banks were unable to obtain concerted and centralized action on any nationwide plan, and they had a difficult time in attempting to compute the costs of the cumbersome arrangements then prevailing. The Federal Reserve System effected noteworthy changes in our clearing and collection machinery, inaugurating a direct, scientific, and economical system. It undertook "to do for the banks of the nation very much what the clearing house does for the banks of the city."⁶ It provided a new mechanism for the handling of out-of-town checks, including means for settling the resulting balances between the Federal Reserve banks themselves.

In July 1916 a compulsory clearing system for all member banks was instituted by the Reserve System. Member banks are required to pay at par all checks drawn on and presented to them through the district Federal Reserve bank. No member bank is compelled to collect its out-of-town checks through its Reserve bank, however, and if it chooses, it can continue to send them to a correspondent for collection. Nonmember banks which agree to remit at par and maintain adequate balances with the Reserve bank in their district are accorded the privilege of the Reserve System's clearance and collection mechanism. Each Reserve bank and its branches undertake to collect free of charge cash and noncash (promissory notes, bills of exchange, drafts and bond coupons) items for its members and for nonmember clearing banks. Its services are available both for collections within the district of the creditor bank (intradistrict collection) and for collections outside the district (interdistrict collection).

Where a member or nonmember clearing bank deposits with its district Reserve bank a check drawn on another member or clearing bank in the same district, the collection process is quite simple. The Reserve bank debits the drawee bank's balance and credits the balance of the payee's bank. Each Reserve bank publishes its availability schedule, based upon the average time it takes for checks, after the receipt by the Reserve bank of the checks to be sent to the drawee bank for presentment. During this period the funds are neither

⁶ W. R. Burgess, *The Reserve Banks and the Money Market*, 2d ed. (New York, 1946), p. 94.

charged against the drawee bank nor credited to the sending bank. According to the time required for collection, member banks depositing checks receive credit at once or within up to 2 business days, at the expiration of which time the credit is transferred from a deferred account to the member's reserve or clearing account and is then available for withdrawal or other use. Banks receive credit on noncash items collected through the Reserve System's collection mechanism only when payment is actually received.

The collection of a check involving banks in different Federal Reserve districts is more complicated, but it is easily handled by the Reserve System's collection mechanism. The bank receiving the check sends it to its district Reserve bank. The latter in turn sends it to the Reserve bank in the district in which the drawee's bank is located.⁷ When the time required for collection expires, the payee's account with its Reserve bank is credited and the Reserve bank in the drawee's district debits the latter's account. Settlement between the two Reserve banks is effected through the Interdistrict Settlement Fund under the supervision of the Board of Governors in Washington, D. C. Daily each Federal Reserve bank and branch wires to the Board of Governors the totals it has credited to every other Reserve bank during the day. The Board effects a clearance and ascertains the final balances, which it wires to the individual Reserve banks for entrance on their books. In accordance with these balances, the Board changes on its books the record of ownership of gold certificates held in the Fund at Washington, which constitutes part of the legal reserve of the Federal Reserve banks.

The Federal Reserve banks make available to member banks facilities for transferring funds by wire to all parts of the country. Any member bank may request its Reserve bank to transfer to any member bank, whether located within or outside its own district, any sum of money in round amounts. If the transfer takes place between banks in one Reserve district, the reserve account of the sender is debited and the recipient bank's reserve account is credited. When the transfer of funds occurs between member banks in different Reserve districts, the reserve account of the member bank sending the funds is debited and the reserve account of the recipient bank is credited by its Reserve bank. Settlement between the Reserve banks is made daily through the Interdistrict Settlement Fund. Transfers of funds are performed free of charge for member banks over the leased wire system connecting the Board of Governors, the United States Treasury, and all the Reserve banks and their

⁷ The checks may instead be sent direct to this Reserve bank when a considerable volume is involved, and the other Reserve bank merely be notified.

branches. Transfers of funds for member banks for the accounts of other banks, individuals, or business firms are made over commercial wires for the cost of the telegram.

Thus, through the Interdistrict Settlement Fund there can be created without cost any amount of exchange needed at any point where a Federal Reserve bank or branch is located, and there can be obtained without cost immediate settlement for any amount of exchange which may accumulate there. "What the check-collection system has done for settlements by check the wire transfer system has done for telegraphic settlements."⁸ Gold and currency movements for settling balances have been almost entirely eliminated.

The Federal Reserve collection system remedied most of the defects characteristic of former arrangements. The result has been to improve the efficiency of, to reduce the expense of, and to increase the acceptability of bank checks as a means of payment throughout the country. The Federal Reserve techniques save time and money by making possible systematic and direct routing of checks and by effecting prompt clearance on the books of the Reserve banks and the Interdistrict Settlement Fund. They reduce the volume of inter-bank balances required for collection purposes, and the amount and distance of currency shipments. They apply, moreover, to time as well as cash items. The Federal Reserve banks make no charge to members using their facilities, and remove the basis for exchange charges by their willingness to pay the cost of shipment of currency to them in payment for checks they present. Member and nonmember clearing banks, however, are permitted to make small regulated charges to those who deposit out-of-town checks. This service charge is permitted to compensate the collecting bank for the time and trouble involved in making the collection.

On the other hand, the system does not cover all banks. The Reserve banks refuse to receive items drawn on "nonpar banks." Nonpar banks do not remit the face value of their customers' checks returned for collection through the mail. Instead they remit the face value of the checks minus an exchange charge which commonly amounts to $\frac{1}{10}$ of 1 percent of the face of the check. At the end of 1951 there were 12,158 banks on the Federal Reserve par list and 1,829 not on the list. The nonpar banks are mainly rural state-chartered banks located in the South and West who derive no small part of their earnings from exchange charges. The Federal Reserve System at one time tried vigorously to enforce par settlement on all commercial banks, but it met violent protest from banking groups,

⁸ Burgess, *op. cit.*, p. 102.

especially country banks. State legislatures passed laws designed to prevent nonpar banks from being coerced into abandoning exchange charges. Moreover, court decisions were adverse to the System's attempt to compel par collection. In 1923, pursuant to instructions from the Board, Reserve banks reverted to the policy of refusing to accept for collection checks drawn on nonpar banks. Thus, the ideal of a check currency circulating at par over the nation at large has not been completely realized.

QUESTIONS AND PROBLEMS

1. a. "There appears to be a great deal of confusion in the public mind as to the principles which should govern the relations of central banks to governments. Perhaps much of the confusion turns upon the failure to distinguish between 'governmental' and 'political' in a narrower sense." (J. H. Williams, "The Banking Act of 1935," *American Economic Review, Supplement*, 1936, p. 99.) Explain.
- b. "The framers [of the Federal Reserve System] had as their purpose the strengthening of the existing banking structure without changing fundamentally the existing unit banking system." Explain how they achieved this objective.
2. Some have proposed that the government acquire ownership of the Federal Reserve banks.
 - a. Who owns them now? Who manages them?
 - b. What difference would government ownership make in the operation of the Reserve banks?
3. a. Why is the Federal Reserve Bank of New York more important than any of the other Federal Reserve banks? Does this make its functions different?
- b. "The Federal Reserve System may properly be described as a centralized banking system." By reference to its structure and functioning, explain why.
4. Explain specifically the leading ways in which the Banking Act of 1935:
 - a. Increased centralization of control within the Federal Reserve System.
 - b. Changed the relations between the government and the Reserve System.
5. a. Contrast the relative status today of membership in the Federal Reserve System and the FDIC. How do you account for the differences found?
- b. Should all commercial banks be members of the Federal Reserve System? Why or why not?
- c. How could membership in the System be expanded?
6. Contrast the bank supervisory activities of the several federal agencies both as to nature and scope.

7. Why should the central bank be charged with fiscal functions for government? Which reason do you regard as most important, and why?
8. a. Is the volume of bank clearings a better index of business conditions than the volume of debits by banks to the accounts of individual depositors in the bank? Why or why not?
b. How would the widespread development of branch banking affect the clearing and collection of checks?
9. a. Explain how the Federal Reserve System has applied the idea of clearing on a national scale.
b. If the Federal Reserve banks use a deferred availability schedule showing the time (varying from the same day to two business days) that must elapse before proceeds of items become available, why do they show a "float" in their statement of condition?
c. Contrast the size and source of float under the correspondent system and the Federal Reserve System.
10. a. Why do member banks of the Federal Reserve System still use correspondent banks? What services do such correspondents render?
b. Distinguish between exchange charges and collection charges. Why are each made? Does either resemble bank service charges on deposit accounts? If so, in which ways?
c. "The imposition of such charges means that part of the check currency of the United States circulates only at a discount, whereas the hand-to-hand currency circulates universally at par." Explain.

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The Federal Reserve System's Control over the Money Stock

WHILE the Reserve System's service functions are useful in providing a smoothly functioning monetary and banking system, the policy-making functions of the System are its major task. The policy-making functions of the Reserve System are concerned with regulating the monetary stock in the interest of the general economic welfare. Alterations of the stock of money provide a means whereby money expenditures are influenced. Money expenditures in turn constitute the effective demand for goods and services. The level of expenditures determines the level of business activity. Usually money expenditures increase when the money stock increases and decline when the money stock declines. Thus, regulation of the stock of money is one means of regulating the public's expenditures for the current output of goods and services.

Demand deposits are the predominant form of money in this country. Together with currency they comprise the nation's stock of money. Currency is supplied jointly by the Federal Reserve banks and the Treasury. Over three fourths of the currency consists of Federal Reserve notes issued by the Reserve banks. Ordinarily changes in the money stock are dominated by changes in the earning assets of the commercial banks. Since there is no assurance that commercial banks will acquire an amount of earning assets that will

give the community an appropriate stock of money, the banks' dealings in earning assets are regulated by the central bank.

When commercial banks acquire earning assets, they create derivative deposits. The law requires that banks must hold reserves against these deposits. Thus, as earning assets are acquired and deposits are created, the banks' excess reserves are reduced. Bank reserves constitute the limiting factor in the deposit-creating powers of the banking system. If commercial banks have excess reserves, they are free to create deposits. If the banks have less reserves than are legally required of them, they are forced to contract credit and reduce deposits or else to borrow additional reserves on terms which the Reserve banks can set. Thus, most of the policy decisions of the monetary authority are directed toward controlling bank reserves.

■ LEGAL RESERVE REQUIREMENTS

The original purpose of legal reserve requirements against deposits was to provide banks with cash in some proportion to their deposit liabilities. These reserves were designed to assure depositors of convertibility of their deposits into cash. This concept of the function of legal reserve requirements has been progressively modified. Experience indicated that a small ratio of reserves is not adequate protection to ensure the conversion of deposits into cash. Moreover, with the advent of a central bank which made all sound assets of a bank convertible into cash, there was less need for the commercial banks to make provision for liquid funds to meet depositors' demands for cash.

The view is now widely held that legal reserve requirements are not designed to provide liquidity to the banks but are designed to provide the central bank with an instrument for controlling the stock of money by altering bank reserves and thereby encouraging or restricting bank loans and investments.

All commercial banks in the United States are required by law or by orders of supervisory authorities to maintain certain minimum reserves against their deposit liabilities. The reserve requirements of banks which are members of the Federal Reserve System are stated in the Federal Reserve Act and are administered by the Board of Governors. Legal reserves of member banks consist exclusively of deposit credits with the Reserve bank of the district in which the bank is located. The reserve percentages are different for demand and time deposits. The percentages are also graded according to the location of member banks in central reserve cities, reserve cities, and country districts. The Board of Governors can change the classifica-

tion of cities or can permit banks within the corporate limits of a central reserve or reserve city to be classified in a lower requirement class. Thus, for example, banks in outlying areas of central reserve cities (Chicago and New York) are subject to reserve city reserve requirements.

Reserve requirements established by the Federal Reserve Act as amended in 1917 remained unchanged until May 12, 1933. Beginning in the depression and becoming increasingly evident after 1932, bank reserves increased much more rapidly than deposits, and banks held substantial amounts of reserves in excess of legal requirements. As long as the banks hold a large volume of excess reserves, they may lend or not, as their own policy dictates. The existence of a large volume of excess reserves may partly or completely neutralize Federal Reserve policies designed to contract bank credit. In recognition of the loss of control over the money stock by the Federal Reserve System, Congress in 1933 authorized the Board, upon affirmative vote of five members and with the President's approval, to increase or decrease at its discretion the reserve to be maintained against either demand or time deposits in times of emergency. The Banking Act of 1935 empowered the Board of Governors, upon affirmative vote of four members, to change such reserves from time to time in order to prevent injurious credit expansion or contraction but not to decrease them below the statutory figure (13, 10, 7, for demand deposits and 3 percent for time deposits) or to raise them to more than double that figure. The change may apply to any or all classifications of member banks. Thus, for the first time in the history of banking in the United States this country had a variable reserve ratio. The Board exercised this new credit control instrument for the first time in 1936 and has utilized it both to expand and contract member bank required reserves on many occasions since that date (Table 33). In 1948, faced with a rising tide of bank lending that was feeding the fires of inflation, Congress granted the Board the power until June 30, 1949, to raise the required reserves against time deposits to 7½ percent and those against demand deposits to 30 percent, 24 percent, and 18 percent for central reserve city, reserve city, and country banks, respectively. This power lapsed on June 30, 1949, and was not renewed.

The reserve percentage effective for time deposits is applied to the gross amount of time deposits. In calculating the required reserves against demand deposits, member banks deduct balances due from other domestic banks (except private banks and American branches of foreign banks) and cash items in the process of collection from gross demand deposits. These deductions give the amount of *net*

TABLE 33
MEMBER BANK RESERVE REQUIREMENTS
(Percent of deposits)

Effective date of change	Net demand deposits ^a			Time deposits (all member banks)
	Central Reserve city banks	Reserve city banks	Country banks	
1917-June 21	13	10	7	3
1936-Aug. 16	19½	15	10½	4½
1937-March 1	22¾	17½	12¼	5¼
1938-Apr. 16	22¾	17½	12	5
1941-Nov. 1	26	20	14	6
1942-Aug. 20	24	..	.	.
Sept. 14	22	..	.	.
Oct. 3	20	..	..	..
1948-Feb. 27	22	..	..	..
June 11	24	..	.	.
Sept. 16	.	.	16	7½ ^b
Sept. 24	26	22	.	7½ ^c
1949-May 1	.	.	15	7 ^b
May 5	24	21	.	7 ^c
June 30	.	20	.	6 ^c
July 1	.	.	14	6 ^b
Aug. 1	.	.	13	.
Aug. 11	23½	19½	.	5 ^c
Aug. 16	.	.	12	5 ^b
Aug. 18	23	19	.	.
Aug. 25	22½	18½	.	.
Sept. 1	22	18	.	.
1951-Jan. 11	23	19	.	6 ^c
Jan. 16	.	.	13	6 ^b
Jan. 25	24	20	.	.
Feb. 1	.	.	14	.
In effect March 1, 1953 ^d	24	20	14	6

SOURCE: *Banking and Monetary Statistics; Federal Reserve Bulletin.*

^a Demand deposits subject to reserve requirements, which beginning Aug. 23, 1935, have been total demand deposits minus cash items in process of collection and demand balances due from domestic banks (also minus war loan and Series E bond accounts during the period Apr. 13, 1943-June 30, 1947).

^b Requirement became effective at country banks.

^c Requirement became effective at central reserve and reserve city banks.

^d Present legal minimum and maximum requirements on net demand deposits: central reserve cities, 18 and 26 percent, reserve cities, 10 and 20 percent; country, 7 and 14 percent, respectively, on time deposits at all member banks, 3 and 6 percent, respectively.

demand deposits to which the legal reserve percentages apply. From April 13, 1943, to June 30, 1947, legal reserve requirements were removed from member banks deposits in the so-called War Loan Accounts.¹ When the Treasury sold securities during bond drives, it placed the proceeds on deposit in banks all over the country; each bank's share of War Loan deposits represented subscriptions by the bank or through the bank for Treasury securities. Since these deposits required no reserves, banks could invest more heavily in government debt on the basis of a given amount of excess reserves.

It is not necessary for a member bank to satisfy its legal reserve requirement continuously. Central reserve city and reserve city banks are permitted to average daily balances in relation to average daily requirements over a period of a week; other member banks can average reserve balances and reserve requirements over a semi-monthly period. Temporary reserve deficiencies are permissible if they are offset within the calculation period by excesses. The Reserve banks impose monthly upon member banks a penalty (now 2 percent a year above the rediscount rate for 90-day commercial paper for member banks) based upon the average daily deficiencies during each of the reserve computation periods. Persistent reserve deficiency can lead to forfeiture of charter for a national bank or membership in the Reserve system for a state bank.

A member bank suffering from a legal reserve deficiency may remedy this situation in a variety of ways. It may borrow the additional reserves it needs through the "Federal Funds" market already described. This method of restoring reserve balances may be useful if the reserve deficiency is of short duration. The member bank may transfer working balances carried with other banks to the Reserve bank. Call loans may be reduced, if the bank has such loans in its portfolio. Readily salable assets may be sold in the open market. Finally, the member bank may rediscount paper with the Reserve bank or borrow from it to build up its reserve account. In the long run, the ultimate method of increasing reserves is to reduce the bank's volume of loans and investments.

DEFECTS OF PRESENT RESERVE REQUIREMENTS

In its present form the legal reserve requirement does not provide the monetary authorities with the power to control precisely the stock of money. At best under a fractional reserve banking system a legal reserve requirement would provide a known

¹ Also includes Series E bond accounts. See note a to Table 88.

limit to the deposit expansion potential of a given volume of bank reserves. Given aggregate reserves of \$1 million and a fixed legal reserve requirement of 20 percent, the ceiling on prospective creation of bank deposits would be fivefold or \$5 million. Whether the banks would lend and the public would borrow \$5 million is not predictable. At one extreme the banks may hold excess reserves of \$1 million with no increase in the stock of money, while in the other extreme the reserves would serve to support the full increase of \$5 million in the monetary stock. Within this range any increase in the stock of money is possible. Therefore, with a fractional reserve banking system the monetary authority's control over the monetary stock is at best uncertain.

However, under our present fractional reserve requirements the monetary authorities cannot even predict the maximum volume of deposits which can be supported by a given volume of bank reserves. The present statutory reserve requirements differ as between central reserve city member banks, reserve city member banks, and country member banks. The volume of deposits which can be supported by a given aggregate of reserves varies with the relative holdings of deposits by the three categories of member banks. A shift of deposits as between different classes of member banks can set in motion forces which tend to credit ease or restraint with a given volume of reserves for the member banks as a whole. The average reserve requirement for all member banks depends on the relative amounts of deposits in central reserve city, reserve city, and country member banks. If, for example, central reserve city banks gain in size, the weighted average legal reserve requirement for the system increases, and the amount of deposits which can be supported by a given volume of reserves falls. Conversely, a fall in the share of total deposits accounted for by the central reserve city banks would reduce the average reserve requirement for the member banks as a whole and enable a greater volume of deposits to be supported by a given amount of reserves.

There is no economic reason for the intercity differential in reserve requirements against demand deposits which exists under the present legislation. These provisions were carried over from the National Bank Act. The original justification for graduating reserve requirements was that country banks held few deposits for other banks, that many banks in larger cities held deposits of country banks, and that a substantial majority of banks in the largest cities held deposits of both country banks and banks in reserve cities. Since interbank deposits were subject to abrupt withdrawals, it was decided to require higher reserves against them. With the tremen-

dous growth in use of banking facilities for all types of business transactions, the location of banks is no longer indicative of the type of deposit held. Therefore, it is no longer possible by applying percentages on the basis of an arbitrary classification of cities to approximate reserve requirements in accordance with the type of deposit held.

The volume of deposits which can be supported with a given amount of reserves varies not only with respect to the category of member bank which holds them but also with respect to whether they are held by member or nonmember banks. The reserve requirements for nonmember banks are determined by the legislatures of forty-eight states.² The actual reserve requirements for nonmember banks on the average are significantly lower than those of member banks. Thus, a shift of deposits between member banks and nonmember banks affects the deposit-creating powers of all banks even when the aggregate of reserves remains unchanged. As the relative share of deposits with nonmember banks increases, the total volume of deposits that can be supported with a given volume of reserves increases; conversely, given a fixed amount of reserves the deposit-creating power of all banks declines as the share of all deposits held by member banks increases.

The existence of different reserve requirements against deposits of member and nonmember banks means that a shift in deposits from member banks to nonmember banks or vice versa alters the deposit-creating powers of the banking system as a whole in the same way as shifts in deposits from one category of member bank to another alters the volume of deposits that can be created with a given amount of reserves for the banking system. In addition, the existence of different reserve requirements for member and nonmember banks may tend to weaken the powers of the monetary authorities to alter the stock of money in other ways. Since member and nonmember banks often compete for the same business and the same customers, the lower reserve requirement for nonmember banks gives them a competitive advantage that tends to weaken the incentives to join the Reserve System. Moreover, the differences in reserve requirements provides an inducement for member banks to withdraw from the Reserve System, particularly when the System in an endeavor to reduce the stock of money resorts to increases in reserve requirements.

² U. S. Congress, Joint Committee on the Economic Report, Subcommittee on General Credit Control and Debt Management, *Hearings*, 82d Cong., 2d Sess. (1952), hereafter described as Patman Hearings, describes state reserve requirements for banks. See Part I, pp. 468 ff.

SOME PROPOSALS FOR REFORM OF LEGAL RESERVE REQUIREMENTS

Proposals to alter the system of legal reserves have been frequently put forth by economists, bankers, and legislators. In the following section we shall discuss a few of the recommendations that have received fairly widespread attention.

A Uniform Reserve Requirement One way of solving the problems of differential reserve requirements among different categories of member banks as well as different reserve requirements between member and nonmember banks would be to establish a system of uniform reserve requirements which would apply equally to all classes of member banks as well as to nonmember banks.

The proposal for a uniform reserve requirement applicable to all banks of whatever class has been suggested by the chairman of the Board of Governors of the Reserve System,³ was endorsed by the so-called Douglas Report,⁴ and again by the so-called Patman Report.⁵ The enactment of this proposal would enhance the effectiveness of Federal Reserve policy in at least two respects. First, a shift of deposits as between classes of member banks or between nonmember and member banks would not affect the volume of excess reserves; thus the monetary authority would gain greater control over the monetary stock than it now has. Second, by eliminating the lower reserve requirements for nonmember banks the Federal Reserve authorities could take appropriate monetary action without fear of a withdrawal from the system of members who wish to take advantage of lower reserve requirements for state banks. In a general way many authorities feel that the imposition of uniform reserve requirements for all banks accepting demand deposits would not threaten the states' rights to charter and supervise banks. It is alleged that the uniform reserve requirement would permit the continuance of the dual banking system without its great disadvantage of thwarting the powers of the Federal Reserve authorities to control the monetary stock.

Abolition of Geographical Basis of Reserve Requirements Against Demand Deposits The provision for uniform reserve requirements for all banks could incorporate a feature designed to

³ See Patman *Hearings*, Part I, pp. 472-474.

⁴ See U. S. Congress, Joint Committee on the Economic Report, Subcommittee on Monetary, Credit, and Fiscal Policy, *Report*, 81st Cong., 2d Sess. (1950), hereafter described as Douglas Report, p. 86.

⁵ See U. S. Congress, Joint Committee on the Economic Report, Subcommittee on General Credit Control and Debt Management, *Report*, 82d Cong., 2d Sess. (1952), hereafter referred to as Patman Report, pp. 44-45.

eliminate the present system of reserve requirements where the height of the reserve against demand deposits depends on the size of the city in which the bank is located. In 1948 a Federal Reserve committee⁶ proposed to abolish the present system of reserves against demand deposits and to substitute a system of geographically uniform requirements based on the types of deposits. The plan called for higher reserve requirements against demand deposits (20 percent) than against time deposits (6 percent) and for higher reserve requirements against interbank deposits (30 percent) than against other demand deposits.

In the main there are two advantages afforded by the proposed system of reserves. Under present reserve requirements net movements of deposits between banks with different reserve requirements add to or subtract from reserves available to the banking system. Enactment of the System committee's proposal would prevent shifts in deposits between different classes of banks from affecting available bank reserves. In addition, the proposed system of reserves would be more equitable than is true of the present system. At the present time banks of similar size and doing roughly similar business may be subjected to different reserve requirements. For example, a small bank in New York must hold reserves almost twice as large percentage-wise as a similar bank that has not been designated as a central reserve city bank.

Reserve Requirements Based on Deposit Velocity In 1931 the Committee on Bank Reserves of the Federal Reserve System, made an extended study of the deficiencies of the system of bank reserves that were mentioned above.⁷ Its report favored abolition of the practice of setting reserve requirements that differed according to the location of the bank and the type of deposit. It also proposed that both vault cash and balances with the Reserve banks should be counted as legal reserve. Finally, the committee recommended a novel proposal that would base reserve requirements of the member banks not on the volume of deposits alone but also on the turnover of these deposits as measured by debits to the deposit accounts. Each member bank (regardless of location) would be required to hold reserves equal to 5 percent of its total net deposits (both demand and time) plus reserves equal to 50 percent of the average daily withdrawals (debits) from all its deposit accounts. However, the maximum reserve requirement could not exceed 15 percent of gross deposits.

The proposal for automatic variation in reserve requirements

⁶ E. A. Goldenweiser, *American Monetary Policy* (New York, 1951), pp. 48-50.

⁷ Federal Reserve Board, *Annual Report* (1932), pp. 260-285.

would tend to restrain monetary expansion in the face of inflationary developments, while in time of economic recession the banks' excess reserves would be expanded, thereby stimulating monetary expansion. When business activity is depressed, bank deposits remain relatively inactive. Thus, required reserve ratios under the velocity proposal would decrease; not only would the banks have more excess reserves, but also these added reserves could lead to greater deposit creation since the deposit-creation multiplier would be expanded. Thus, recession would induce automatically an expansive monetary policy. Contrariwise as business activity expanded required reserve ratios would rise. The velocity requirement would impose automatic increases in legal reserves as debits increased even if total deposits did not increase. Excess reserve would decline, and the deposit-creation multiplier would be reduced, thus reducing the capacity of the banks to increase deposits.

Undoubtedly the enactment of this proposal would aid the Reserve authorities to achieve greater control over the monetary stock than they presumably have. The velocity requirement would provide monetary control by a mechanical formula rather than by the intelligent application of knowledge to concrete economic situations. Bank debits are not necessarily an adequate index of the need for monetary expansion or contraction. If the velocity requirement had been used in the late 1920's, it would have imposed little restraint until 1928, by which time the vast expansion of net deposits was practically completed. In any case, Congress refused to enact this proposal.

SUPPLEMENTARY SECURITY RESERVE PLANS

Proposals for security (or secondary) reserve requirements for commercial banks have been widely discussed since the end of World War II.⁸ One variety of security reserve plan relates to a situation in which the yield on short-term government securities is lower than the yield on long-term issues and in which this relationship is maintained by a market support policy which removed the risk of price declines for both classes of issues. Such a situation existed in the United States at the end of World War II. Had the Reserve authorities been willing and able to permit the government securities market to seek its own level, the System would have been free to control the monetary stock by open-market operations. Be-

⁸ One of the first suggestions for a security reserve proposal is found in 1940: L. H. Seltzer, "The Problem of Our Excessive Banking Reserves," *Journal of the American Statistical Association* (March 1940), pp. 24-36.

cause the Reserve authorities were sympathetic with the Treasury's desire to keep down the interest charges on its debt, they continued to support the market for government obligations. By supporting the market for these obligations in order to keep interest rates at low levels, the Federal Reserve banks provided an abundant supply of reserve funds to the banks for use in any way they saw fit.

In the light of these circumstances the banks tended to sell short-term government obligations to the Reserve banks and thereby increased their reserve balances. After 1945 the public was borrowing heavily from the banks; the monetary stock expanded as banks used their newly created reserves to write up deposits in making loans to customers and by purchasing long-term government securities.⁹ The Reserve System was unable to control the volume of bank reserves since the Reserve banks were committed to pay reserve balances to commercial banks whenever the latter chose to sell their holdings of Treasury issues.

In the face of these expansive monetary developments, the Reserve System submitted a plan to Congress which would have required that banks hold in addition to their regular reserve a special supplementary reserve consisting of Treasury bills, certificates of indebtedness, or short-term notes. Vault cash and excess reserves might be substituted for short-term government securities in meeting the supplementary reserve requirement if the banks so desired.

In simplest terms this proposal would not limit the total earning assets of the banks. By making short-term Treasury issues required reserves, this proposal would prevent the banks from selling these issues to the Reserve banks or allowing them to run off at maturity. If either of these courses of action were followed, the banks would acquire additional reserves which could serve as the basis of a multiple expansion of deposits.

The security reserve proposal would not directly restrict the banks' power to expand deposits as long as securities required for reserves could be purchased in the market. Assume that the banking system acquired an additional \$1 billion in cash reserves which could serve as a basis for expanding deposits by \$5 billion. The expansion in deposits could occur whether or not there was a security reserve. The only effect of the security reserve would be that a portion of the new assets acquired by the banks would have to be reserve-eligible securities. Only if the supply of reserve-eligible securities were controlled, could the security reserve proposal operate in a

⁹ In more technical parlance the government debt formerly held by nonbank investors was monetized since the former holders of government debt substituted deposits (money) for government obligations (near money).

serious way to restrict deposit creation by the banks. If, in the above illustration, the banks were required to keep a reserve of 25 percent of demand deposits in the form of eligible securities and no reserve-eligible securities were available, then no additional deposits could be created despite the fact that the banking system had acquired an additional \$1 billion of cash reserves.

The imposition of a security reserve would reduce the liquidity of the banks because of the obligation of the banks to hold intact government securities which are among the most liquid assets held by those institutions. If the reduction in bank liquidity were serious enough, it might cause banks to slow down their expansion of deposits since they would not want to tie up all their securities as reserves but would prefer instead to hold some free to provide liquid assets which could be converted into cash when, as, and if needed. In other words, enactment of the security reserve proposal might have prevented banks from selling their short-term governments to the Reserve banks and obtaining additional reserves which would serve to support additional deposits.

The permissible supplementary reserve percentages would need to be large enough so that banks would not have any substantial margin of government securities which they would feel free to liquidate in order to expand credit to private borrowers. The availability of both primary reserves and reserve-eligible securities would have to be limited and kept limited throughout the period that the supplementary reserve requirement authority remained in effect. Federal Reserve bank credit, therefore, could not be made available at the option of holders of government securities. This means that interest rates would need to vary in response to market conditions of supply and demand, and they could not be held to a fixed pattern by Federal Reserve operations: otherwise a supplementary securities reserve requirement would have little special value in combating inflationary forces. This condition is essential to the effective operation of any system of reserve requirements, of course, and is not applicable merely to supplementary securities reserve plans.

A variant of the aforementioned short-term government security reserve plan would establish a supplementary reserve requirement to be held in the form of any bank-eligible government securities regardless of maturity. The elements of strength and weakness of this proposal are in a broad way similar to the security reserve plan discussed above.

The forces of inflation were being fed by additional bank deposits in 1948; the bond support program of the Reserve banks eliminated the most powerful tool available to the Reserve authorities to com-

cash reserves. Conversely, a withdrawal of deposits from the banking system may force a contraction of deposits greatly in excess of the sum withdrawn. Some people have gone on to argue that the money stock is perverse under the operations of our present fractional reserve banking system. Thus, when business is brisk, people flock to the banks to borrow, and the banks are quite willing to lend. The resulting complete utilization of deposit-creating powers under the fractional reserve banking system leads to monetary expansion and inflation. Conversely, in times of depressed activity people repay bank loans, new borrowers are not forthcoming, and the banks are unwilling to lend so that excess reserves lie idle. Thus, the actual size of the monetary stock is dependent on the extent to which the banks extend loans and make investments and is far removed from the control of the central bank.

Under the present fractional reserve banking system a change in the components of the monetary stock, that is, conversion of deposits into currency or vice versa influences the quantity of both in existence. Here again the size of the monetary stock is beyond the effective control of the monetary authority. If depositors convert their deposits into currency, the fractional reserves held against the withdrawn deposits provide a small part of the cash needed. Two courses of action are available to the banks to obtain the cash necessary to pay off their depositors. One, they may call loans and sell some of their investments to augment their cash. But the banks, if left to themselves, can increase their free cash only by a small proportion of the assets needed (10 percent if the reserve requirement is 10 percent, etc.). Every time a conversion of deposits into currency takes place, the monetary stock is reduced by some multiple (depending upon the reserve ratio) of the loss of cash to the public. A second course of action available to the banks when faced with a withdrawal of deposits in cash is to go to the central bank and sell some of their assets, thus adding to their reserves which can be withdrawn in the form of Federal Reserve notes with which to pay off depositors. If the public's desire for cash continues, the central bank may find itself unable to create additional reserve and Federal Reserve note liabilities since the central bank must maintain a reserve in gold certificates against its own liabilities. This situation arose in 1932. A protracted public demand for cash occurred. The banking system became insolvent, and all the characteristics of a financial panic were present. Many banks were forced to shut their doors, forced liquidation of bank loans and distress selling of bank investments took place; these actions in turn merely whetted the public's

appetite for cash, which caused further liquidation and the attendant deflation.

To remedy these defects in the fractional reserve banking system, a number of economists have proposed a plan commonly called 100-percent banking. The essence of this plan is its requirement that demand deposits be backed fully by cash in the bank's vaults, or by deposits with the central bank, or by a combination of the two. The plan would not require any change in the present relation between banker and depositor nor in the present system of check clearance. In effect the 100-percent reserve plan would strip the banks of the power to create money by acquiring earning assets. Demand deposits would rise only as cash actually was deposited with the banks and would fall only as cash was withdrawn. Thus, the banks would act solely as warehousemen for cash and as bookkeepers for their depositors' accounts.

Under this scheme the commercial banks would no longer be able to expand a dollar of reserves into several dollars of demand deposits. At no time, therefore, could the bank be insolvent or illiquid since every dollar of deposit liabilities is supported by a dollar in cash. A change in the public's desire for currency instead of deposits could be viewed with equanimity as the reduction in deposits would release just enough reserve funds to meet this drain unlike the present situation where a loss of a dollar of reserves requires some multiple reduction in demand deposits.

Since the central bank would no longer share the money-creating power with the commercial banks, it would have direct and complete power to control the stock of money. Some critics of 100-percent banking point out that while the central bank would acquire sole power to alter the stock of money, changes in the velocity of that stock would not be touched by the proposal. Since changes in velocity may be as important for economic activity as changes in the quantity of money, it is argued that 100-percent banking has severe limitations as an economic panacea. It must be evident that in a free enterprise society where individuals are at liberty to dispose of their money as they see fit a monetary authority—whether under fractional or 100-percent reserves—cannot control the velocity of money. Unlike a fractional reserve system the 100-percent proposal gives the central bank greater and more certain control over the money stock. Thus, under 100-percent reserve banking the central bank would be in a better position to offset changes in velocity by counter changes in the quantity of money. Thus, for example, an increase in velocity could more certainly be offset by a decrease in the quantity of money under 100-percent banking than under fractional

reserve banking. However, it must be clear that 100-percent banking would not empower the central bank to control the velocity of money per se any more effectively than it can under a fractional reserve system.

It should be clear that the demand deposit departments of the banks would continue to incur costs in connection with the acceptance of deposits and the clearing and collecting of checks for their depositors. Since these departments would no longer have earning assets but would hold 100-percent reserves in cash it would be necessary for the banks to levy charges for the services they render to their demand depositors. Alternatively, if the advantages of 100-percent banking were so great as to provide a general public benefit, the government might subsidize these banks so that service charges would be kept low and check payments would continue to be the dominant means of effecting payments.

Since adoption of a 100-percent reserve plan would involve a drastic reorganization of the banking system an important issue centers around the manner in which it would be started. If a 100-percent reserve scheme were instituted with no change in the present quantity of reserve funds, a tremendous deflation would ensue as all banks called loans and sold off their investments to acquire cash reserves equal to their demand deposit liabilities. Since one bank's gain in cash would be another bank's loss, the only way the 100-percent reserve would be achieved is when deposits were reduced substantially. No advocate of 100-percent reserve banking would favor instituting this proposal under such deflationary pressures.

Proposals for the transition from fractional reserve banking to 100-percent reserves range from the suggestion that the monetary authority should hand the banks a free gift to create 100-percent reserves to plans for the monetary authority to purchase assets from the banks until the latter have enough cash to practice 100-percent reserve banking. In between these extremes are a whole range of suggestions to the effect that cash reserves should be raised in successive steps over a period of years until a 100-percent requirement is finally attained.

Thousands of business firms depend on bank loans to finance their operations. One major justification for bankers in our present society rests on their function as the source of loans and investments to finance business and their role in guiding capital to investment opportunities. One set of objections to 100-percent banking centers around the availability of bank loans under this scheme.

No advocate of 100-percent banking proposes to abolish bank lending and investing. The function of investing would be taken care

of in departments of the bank not connected with the demand deposit department or would be handled in separate institutions. Funds for loans and investments would be obtained from the sale of stock or debt instruments and the receipt of time deposits. Only small reserves or no reserves at all would be required against the debt instruments or time deposits outstanding. Thus, all or almost all the funds of the time deposit department or institution would be available for loans and investments. It is important to note that the so-called time departments could not create money because they would need to have a dollar in cash for every dollar of loan or investment they extend.

The 100-percent reserve proposal would involve upsetting current methods of business financing. The question of whether such a proposal is worth the cost of such upset depends in the final analysis on whether the possible gains of monetary reform outweigh the disadvantages of instituting new methods of business financing.

Under 100-percent banking the total size of monetary stock would be determined by the monetary authority. Some proponents of the plan favor a specific act of legislature regulating the size of the monetary stock in accordance with some index of economic activity—for example, a price index. In this scheme if prices fell below a specific level mentioned in the statute, the monetary authority would be required to increase the monetary stock. Conversely, if prices rose to the level specified in the law, the monetary authority would be required to reduce the monetary stock. Others prefer to vest the monetary authority with considerable discretion in determining the size of the monetary stock.

How could the monetary authority alter the monetary stock under the 100-percent reserve proposal? If the authority wanted to increase the money stock, the government could reduce taxes and finance its deficit by printing additional money. Alternately, the government could increase its expenditures and finance these expenditures by printing money. Moreover, the monetary authority could engage in open-market purchases for which it would pay by issuing money. Conversely, reductions in the monetary stock could be achieved by budgetary surpluses—either through increased taxes or reduced expenditures—and open-market sales which sop up money as the public pays for the securities sold by the monetary authority.

Critics of 100-percent banking often object to centralized government control over the stock of money. In general, the argument is stated in this form: a politically appointed body would be subject to great public pressure, always for expansion and scarcely ever for contraction. This argument may or may not be defensible. It should

be clear that if the legislature yields to pressure for expansion, it can do so under fractional reserve banking too by relaxing the banking laws. If it can be proved that divided control over the monetary stock under fractional reserve banking ensures greater freedom from political pressure than would be true under 100-percent reserve banking, this objection to 100-percent reserves would be valid.

It cannot be pretended that 100-percent banking would do away with all monetary influences not originating with the central authority. Bankers could still contract loans if they wished to. But they would accumulate excess reserves to the full amount of loan reduction not to a fraction as is true now. Escape from demand deposit control through use of time deposits or private debt of third parties as a means of payment could offset the advantages of imposing 100-percent reserves. While it is true that some important elements in the monetary system would be beyond the reach of management, the stock of money would be controllable.

While the 100-percent reserve proposal has much merit as a fundamental reform of control over the monetary stock, it would require a general reorganization of financial institutions and practices. As a matter of practical politics, the possibilities of its adoption by our legislature, which is generally averse to radical reorganization of present day institutions, is so slight that 100-percent banking is not likely to be enacted in the foreseeable future.

■ FEDERAL RESERVE BANKS' STATEMENT

The Federal Reserve banks hold the reserve balances that member banks are required by law to maintain against their deposits. The Reserve banks issue most of the currency placed in circulation in response to the public's demand for currency. Member banks obtain Federal Reserve notes by reducing their reserve balances with the Reserve banks. By adding to or subtracting from the banks' deposits with the Reserve banks, the Federal Reserve System alters the member banks' reserves and hence their capacity to create deposits (acquiring earning assets) or to meet the community's demand for currency.

In order to understand how the Reserve banks alter the reserve balances of the member banks, it is important first to review the central bank's operations. The Federal Reserve banks operate on principles that are similar to those of commercial banks with two rather important differences. Unlike commercial banks, the Reserve banks are empowered to issue their own circulating promissory notes which comprise the predominant part of the country's stock of legal

tender currency. Unlike commercial banks, the Reserve banks do not hold deposits for the general public. They hold deposits only for banks, mainly member banks, and for the federal government. Except in unusual circumstances the Reserve banks do not make direct loans to the public but deal only with banks.

As we saw earlier, deposits appear on the books of commercial banks as a result both of the lodgment of cash with the bank and the acquisition of earning assets by the banks, and by far the largest volume of deposits arises from the latter type of transaction. The major classes of assets of the Reserve banks are their cash and earning assets. In paying for these assets the Reserve banks increase their indebtedness. Their liabilities consist primarily of either Federal Reserve notes or deposits due to member banks, the Treasury, and to a smaller extent deposits owed to others.

The operations of the Reserve banks can best be understood by examining the combined statement of their assets and liabilities (Table 34 and Figure 20). The most important cash asset of the Reserve banks consists of *gold certificates*. The amount of gold certificates rises whenever the Treasury issues them in order to increase its deposit account with the Reserve banks against which it draws checks. Conversely, when gold certificates are reduced, deposit balances of the government at the Reserve banks are reduced. *Other cash* represents the Reserve banks' holding of currency issued by the Treasury. It is similar to vault cash of the commercial banks and is immediately available for shipment to commercial banks who wish additional amounts of currency.

The Federal Reserve banks hold three main classes of earning assets. *Discounts and advances* represent loans to and rediscounts for member banks. Acceptances purchased in the open market (now few in number) are also included in this item. *Industrial loans* represent direct loans by the Reserve banks to industry. By far the largest category of earning assets are the Reserve banks' holdings of *government securities*.

The loans and investments of the Reserve banks are of critical importance in determining the nation's money stock. The banks pay for their earning assets by issuing Federal Reserve notes, which comprise the largest component of the stock of currency, or by crediting the reserve accounts of the member banks, who in turn can expand their deposits on the basis of the additional reserves acquired.¹⁰

The asset *uncollected* and the liability *deferred availability items*

¹⁰ In those rare instances where the Reserve banks purchase securities directly from the Treasury, the latter's deposit account at the Reserve banks is credited.

TABLE 34

STATEMENT OF CONDITION OF ALL FEDERAL RESERVE BANKS,
DECEMBER 31, 1951
(000 dollars omitted)

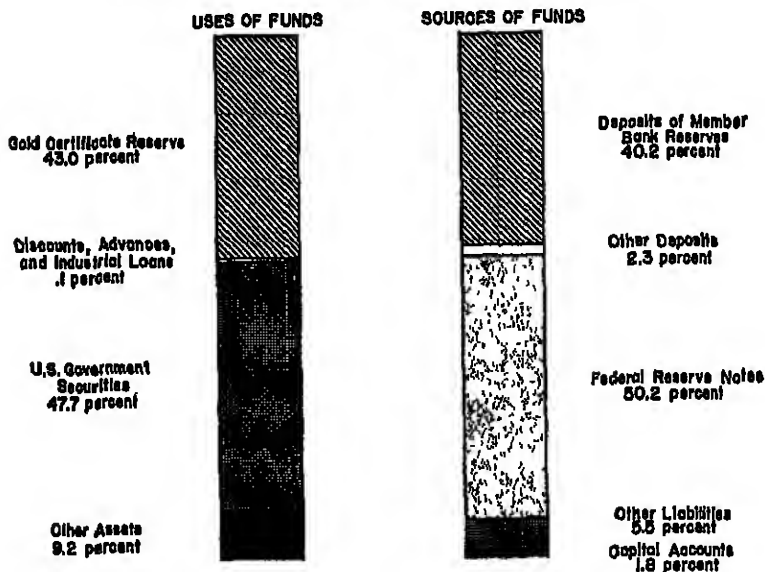
<i>Assets</i>	
Gold certificate reserves	\$21,468,067
Other cash	323,175
Discounts and advances	19,347
Industrial loans	4,637
United States Government securities	23,801,358
Bills	\$ 596,360
Certificates	12,792,798
Notes	5,068,073
Bonds	5,344,127
Due from foreign banks	28
Federal Reserve notes of other Federal Reserve banks	201,141
Uncollected items	3,905,327
Bank premises	43,599
Other assets	133,157
Total assets	<u>\$49,899,836</u>
<i>Liabilities</i>	
Federal Reserve notes	\$25,064,109
Deposits	
Member bank—reserve account	20,055,716
U. S. Treasurer—general account	246,687
Foreign	526,375
Other	362,798
Deferred availability items	2,721,490
Other liabilities	13,809
Total liabilities	<u>\$48,990,984</u>
<i>Capital Accounts</i>	
Capital paid in	\$ 236,613
Surplus (Sec. 7)	538,342
Surplus (Sec. 13b)	27,543
Other capital accounts	106,354
Total capital accounts	<u>\$ 908,852</u>
Total capital accounts and liabilities	<u>\$49,899,836</u>

SOURCE: Board of Governors of the Federal Reserve System, *Annual Report* (1951), pp. 54-55, 60.

should be considered together. When a Federal Reserve bank receives checks and other cash items from clearing banks for collection, it places the amounts as an asset (uncollected items) and as a liability (deferred availability). The collection items are classified according to the time normally required to collect them. The forwarding bank is given a deferred availability credit according to the Reserve bank's

FIGURE 20

MAJOR CLASSES OF ASSETS, LIABILITIES, AND CAPITAL OF
FEDERAL RESERVE BANKS, DECEMBER 31, 1951



availability schedules, which may run as long as 2 business days. At the expiration of the availability period, the forwarding bank's deferred availability credit is canceled, and an unconditional credit to the bank's reserve account is made. The availability schedule sometimes allows for less time than is actually consumed in collecting checks so that the forwarding bank's reserve account is credited before the payee bank's reserve account is debited. For example, Bank A in New York sends a check against Bank B in San Francisco to the Federal Reserve Bank of New York. The availability schedule of the New York Reserve Bank for items drawn on banks in San Francisco is 2 days. Thus, at the end of 2 days Bank A's reserve account is credited for the amount of the check. Normally, at the end of 2 days the Reserve Bank of San Francisco should have debited

the reserve account of Bank B. For the banking system as a whole reserves would then have remained the same although the ownership would have been altered between Banks A and B. Assume, however, that by the end of the second day the check on Bank B had not been presented to it. Bank A's reserve account would have been credited, but Bank B's reserve account would not have been debited. Thus, the net difference between uncollected items and deferred availability represents "float" which develops because the time schedule allows for less time than is actually consumed in collecting checks; the "float" represents an extension of Federal Reserve credit to the banking system.

Federal Reserve notes of other Federal Reserve banks should be offset against Federal Reserve notes which appear among the liabilities. The true liability of the Reserve banks, as a whole, on account of outstanding notes, is the difference between these two items. The items *dues from foreign banks* and *bank premises* are self-explanatory. *Other assets* are a residual item which includes, among other things, premium on securities and interest accrued.

The bulk of the Reserve banks' deposit liabilities consists of *deposits due to member banks*. The member banks' deposits with the Reserve banks satisfy the legal reserve requirement that banks must maintain against their deposit liabilities. Deposits with the Federal Reserve banks are convertible, as the commercial banks wish, into legal-tender currency (Federal Reserve notes or Treasury currency) for their own vault cash or for use by the public when it withdraws deposits in currency.

Deposits due to the United States Treasurer represent the general account of the government which is utilized in meeting its obligations. *Deposits owed to foreign creditors* are mainly the dollar balances of foreign central banks and treasuries as well as the deposits of the international monetary agencies.

The *capital paid-in* represents the value of all the stock of the Federal Reserve banks owned by the member banks. *Surplus* (section 7) consists of the accumulated net earnings of the banks which remain after the payment of dividends and the payment of franchise taxes to the federal government. In the event the Reserve banks are dissolved the surplus belongs to the Treasury. *Surplus* (section 13b) represents funds returned to the Reserve banks by the United States Treasury to enable the former to grant industrial advances. Current earnings not yet transferred to surplus (section 7) and reserves for contingencies are included in the *other capital accounts*.

■ COLLATERAL AND RESERVE REQUIREMENTS OF THE CENTRAL BANK

The principal vehicle through which the Reserve System exercises control over the monetary stock is by varying its holding of earning assets. The ability of the Reserve banks to alter the volume of deposits on their books as well as the amount of Reserve notes outstanding may be affected by the resources available to the banks. In an absolute sense, the Reserve banks may have insufficient resources to engage in the scale of operations sometimes required for effective monetary control. Some portion of the Reserve banks' earning assets cannot be utilized since the banks must reserve a minimum bloc of assets to provide income sufficient to cover operating expenses as well as the statutory dividends on member banks' holdings of Reserve bank stock. Moreover, the Reserve banks may not be able to dispose of earning assets because they need them to meet collateral requirements on Federal Reserve note issues. Finally, the amount of liabilities the Reserve banks may incur in the form of deposits and Federal Reserve notes outstanding is limited by the requirement that Reserve banks must maintain a reserve against their liabilities.

COLLATERAL REQUIREMENTS

The original Federal Reserve Act went to great lengths to protect the *safety* as well as the *elasticity* of the Federal Reserve note. When the act was passed, provision was made for issuance of Reserve notes to the banks by the Federal Reserve agents. The banks were required to deposit commercial paper equal to 100 percent of the outstanding notes; in addition, a gold reserve equal to 40 percent of Federal Reserve notes in circulation was to be set aside. Thus, the total reserve and collateral requirements amounted to 140 percent. In June 1917 the Federal Reserve Act was amended to require the pledge of assets equal to the face value of outstanding Federal Reserve notes. Of the 100 percent reserve and collateral required, 40 percent had to be in gold and the remaining 60 percent could be commercial paper and gold in any proportion.

Elasticity of Currency One of the major complaints against the national banking system was the lack of elasticity in the nation's currency and bank reserves. When people converted deposits into currency, the country banks withdrew their deposits in city banks

in the form of currency. This often led to a shortage of bank reserves which was reflected in a "tight" money condition; if the conversion of deposits into currency went far enough, the banks were forced to suspend conversion of deposits into currency. Even the seasonal growth of currency in circulation led to rapid and sometimes serious shortages in bank reserves.

The Federal Reserve System was established to supply the desired elasticity in currency and bank reserves. The framers of the law intended the elasticity to come principally from Federal Reserve notes. The notes were to be issued with a backing of 100 percent in commercial paper and 40 percent in gold. Great stress was laid on maintaining a direct link between commercial paper and Federal Reserve note issues since it was believed that banks would be able to convert their deposit liabilities into note liability form as the occasion for such conversion arose. Member banks in need of reserves would rediscount eligible paper, and the Reserve banks could then issue more notes with the added collateral which resulted from member bank borrowing. It was hoped that in this manner member banks could add to their reserves without reducing their loans and investments; avoidance of the latter action is desirable since it might precipitate deflation.

The belief of the founders of the Reserve System that by issuing currency against self-liquidating commercial paper automatic elasticity of the currency would be ensured is no longer widely held. It has since been learned that changes in the volume of currency are responsive to various economic developments, and elasticity of currency is provided by enabling banks to shift their demand deposit liabilities into note liability form as the need arises. There is no reason to limit the amount of note issues to the amount of commercial paper which comes into the hands of the Reserve banks. Elasticity of currency arises from the general ability of the Federal Reserve banks to increase or decrease the amount of money of any description in circulation.

Safety of Currency The provision for backing Federal Reserve notes by commercial paper in addition to a gold reserve arose from a desire to give special protection to the hand-to-hand money used by the public in the event of insolvency of a Federal Reserve bank. Congressional concern over the safety of note issues is difficult to reconcile with the lack of decisive action to ensure the solvency of commercial banks and the safety of bank deposits. Currency and demand deposits are, after all, interconvertible liabilities. There is no real purpose served by the pledge of specific collateral with Federal Reserve agents as backing for Reserve notes. The notes are direct

obligations of the government which retains a first lien on all assets of the Reserve bank to protect the Federal Reserve notes.

Collateral Requirement and Freedom of Action by Monetary Authorities For many years the system of backing for Federal Reserve notes presented no difficulties to the monetary authorities. On occasion, however, the requirement for collateral behind Federal Reserve notes served as a definite impediment to the freedom of action in pursuing proper monetary policy on the part of the Reserve System.

In 1931 and 1932 collateral requirements interfered with the monetary policy activities of the Reserve System. At that time there was a severe business depression. There was a large withdrawal of cash from member banks which forced the Reserve banks to issue a great many notes. At that time the Reserve System was engaging in open-market purchases in order to build up the reserves of the banking system. As a result of the open-market purchases and the declining demand for bank credit, member bank rediscounts and borrowing declined sharply. The Reserve banks, therefore, were faced with a shortage of commercial paper eligible as collateral for Federal Reserve notes. Thus, gold was used as collateral beyond the 40-percent minimum then required by law. The free gold (gold not used as collateral for notes and as required reserve against Reserve banks' note and deposit liabilities) was being reduced. Any substantial withdrawal of gold for export or for hoarding reduced the free gold to a point where the Reserve banks were fearful that they would have to engage in open-market sales to force banks to rediscount. An increase in rediscounts would provide Reserve banks with collateral for note issues as a substitute for gold. However, engaging in open-market sales would have entailed a reversal of the easy-money policy the Reserve authorities were attempting to pursue to stem the tide of deflation.

On February 27, 1932, the Glass-Steagall Act was passed, amending the Federal Reserve Act. The emergency legislation gave the Reserve banks temporary permission to use government securities as collateral for Reserve notes in place of either rediscounts or gold. The immediate result of this legislation was to enable the Reserve banks to issue notes without causing them to reverse their open-market purchases to ensure easy-money conditions. This emergency legislation was renewed from time to time until June 1945, at which time it was made a permanent part of the act. Thus, practically all assets of the Reserve banks can now be used as collateral for Federal Reserve notes. Since these notes represent a direct liability of the

federal government, the special setting aside of collateral has no significance and should be abandoned completely.

RESERVE REQUIREMENTS

Reserve banks can write up deposits on their own books by making loans or purchasing securities. Similarly, the banks can issue Federal Reserve notes by making loans and investments. Are there any limits to the amount of liabilities the Reserve banks can incur in the form of deposits or Federal Reserve notes outstanding?

Until June 12, 1945, the Reserve banks were required to maintain at least 40 percent in gold certificates against issues of Federal Reserve notes and 35 percent in gold certificates or lawful money against deposit liabilities. The higher reserve against Federal Reserve banks' note liabilities than deposit liabilities was a reflection of the solicitude about the safety of the community's hand-to-hand money. Deposits with the Reserve banks were viewed as being of interest mainly to banks. In point of fact, since both types of liabilities are interconvertible, the distinction in reserve requirements served no useful purpose.

Since 1945 a uniform requirement of 25 percent in gold certificates has been in effect. In other words, under the present statutes the Reserve banks are not to have outstanding at any time deposits and Federal Reserve notes equal to more than four times their holdings of gold certificates. Thus, the reserve requirements for Federal Reserve banks set a maximum limit to Federal Reserve bank loans and security purchases since the latter give rise to Federal Reserve notes or deposits on the books of the Reserve banks.

The Board of Governors is authorized to suspend the reserve requirements for a period not exceeding 90 days and to renew the suspension from time to time for periods not longer than 15 days. If the Board avails itself of this power, it is required to assess a graduated tax upon the Reserve bank based on the reserve deficiencies.¹¹ The Reserve authorities are reluctant to utilize their powers to suspend reserve requirements because it is evidence of distress which may easily cause the financial community to engage in widespread liquidation.

¹¹ The Federal Reserve Act specifies the rate of tax in connection with deficiencies in reserves against Federal Reserve notes; the tax paid by the Reserve bank must be added to its rediscount rate. The law does not stipulate the rate of tax to be imposed on a deficiency in reserves against deposit liabilities nor is there any direction that the rate of the tax must be added to the bank's rediscount rate.

The rationale behind the imposition of reserve requirements against Federal Reserve banks' note and deposit liabilities was to create confidence in these liabilities and to place limits on the volume of notes and other Reserve bank credit which was created. Through most of their history the Reserve banks have had a comfortable margin of reserves in excess of their legal requirements. Thus, Reserve bank policy has not been much influenced from month to month by fears of falling below requirements. Reserve banks are not run for profit and have pursued a policy of carrying reserves against their deposits and note liabilities much in excess of the minimum legal requirements. Since Reserve bank policy has been directed at economic stability rather than complete utilization of their reserves, there has been little gained by imposing reserve requirements against Federal Reserve banks' liabilities.

On the other hand, there have been times when excess reserves of the Reserve banks fell to dangerously low levels and the Reserve authorities were forced to take restraining action which was not in the public interest. An instance is afforded in 1931 and 1932 when a rapid outflow of gold reduced the excess reserves of the Reserve System to dangerous levels. It was unfortunate that the Reserve authorities reversed their easy-money policy and raised rediscount rates at a time when banks were failing in large numbers and bank credit was being liquidated at a rapid rate. In order to undertake a concerted easy-money policy it would have been necessary to suspend reserve requirements. The authorities were not willing to take this course of action for fear of precipitating a panic.

In 1945 excess reserves of the Reserve banks were low and declining because of gold exports and a tremendous increase in currency in circulation. The Reserve System was convinced that a choice had to be made between either reducing reserve requirements for the Reserve banks or forcing the Reserve banks to improve their reserve position by selling earning assets—mainly government securities. The sale of governments by the Reserve banks would have played havoc with the Treasury's plan to finance its wartime deficits at low interest rates. Congress chose to reduce Reserve bank reserve requirements.

There is serious question as to the desirability of required minimum reserves for central banks. The purpose of reserve requirements appears to be to restrain the Reserve banks from indulging in undue expansion. As we have seen above, throughout the greater part of their existence the banks have had excess reserves; hence the reserve requirements were not an impediment to expansion. On a few occasions the minimum reserve requirements have served

as a legal restraint on the freedom of action of the Reserve authorities to expand reserve bank credit in order to provide the cash which a panicky public desired. On another occasion, in 1945, requirements were relaxed just as they were about to become effective.

Every owner of money decides the respective amounts to hold in currency and in demand deposits. The present reserve requirements for the Reserve banks give the public's choice of holdings of currency and demand deposits undue weight in affecting the monetary authority's control over the stock of money. If the public insists on holding a dollar in Federal Reserve notes, the Reserve banks tie up twenty-five cents in gold reserves. On the other hand, for each dollar the public holds in the form of demand deposits the Reserve banks require five cents in gold reserves.¹² With a given volume of monetary gold the maximum size of the monetary stock depends on the public's preference for deposits or currency.

Since currency and demand deposits are interconvertible forms of money, it should be possible to convert the whole of demand deposits into currency without affecting the gold reserve position of the Reserve banks. One way of ensuring that convertibility of deposits into currency would not affect the reserve position of the Reserve banks would be to lower the reserve requirement for notes to coincide with the reserve requirements applicable to demand deposits of member banks.¹³ Alternatively, the complete elimination of reserve requirements for Reserve banks' note and deposit liabilities would have the effect of preventing changes in the form of money held by the public from affecting the central banks' control over the stock of money.

Legal reserve requirements for the central bank place a statutory ceiling on the size of the monetary stock. One great difficulty with this arrangement is that the maxima become outdated as the population, volume of output, and money-using habits of the public change. When this happens, one of two courses is open to the legislature. It may retain the existing reserve requirement and run the decided risk that a growing shortage of money will precipitate a decline in economic activity or it may lower reserve requirements

¹² On the average commercial banks maintain reserves equal to 20 percent of demand deposits with the Reserve banks. The Reserve banks are required to maintain a minimum reserve equal to 25 percent of their note and deposit liabilities. Thus, Reserve banks are required to maintain a reserve of 5 percent (25 percent of 20 percent) in gold certificates against commercial bank deposits.

¹³ Using the illustration of Footnote 12 above, if the Reserve banks were required to maintain a reserve equal to 5 percent of notes outstanding, a shift in the public's preference for notes rather than demand deposits would not alter the excess reserves of the Reserve banks.

to permit an increase in the monetary stock. Clearly, the first course of action should be avoided. If the second course is followed, there is little to be said for central bank reserve requirements. If the requirements are changed every time they become effective in preventing an expansion in the stock of money, there is little point to retaining them on the statute books.

Historically, required reserves for central banks were employed to restrain their expansion of the monetary stock. With the passage of years central banking has become more closely integrated with other elements of public economic policy. Thus, the prevention of abuse by the monetary authority would appear to lie in the direction of developing sound judgment in economic policy rather than in retaining reserve requirements against central bank liabilities. Because reserve requirements are a part of the political tradition in this country, they will probably be retained in our banking statutes.

QUESTIONS AND PROBLEMS

1. a. Explain the relation between the clearing and collection and the reserve problems.
- b. The pyramiding of reserves that existed under the National Banking System was widely criticized. Was pyramiding abolished or made less harmful by the Federal Reserve Act? How?
- c. Explain what W. R. Bugess means (*The Reserve Banks and the Money Market*, 2d ed., New York, 1946, p. 26) when he says that a first "principle which gives greater effectiveness to reserves under the Federal Reserve System is the insurance principle of distributing the risk."
2. a. "The member bank reserve position is the focal point in Federal Reserve policy." Explain.
- b. "The Federal Reserve monetary controls are all related in one way or another to the fact that our banking system operates with fractional reserves." Explain.
3. a. Some have regarded the plan for a supplementary security reserve as essentially an expedient to deal with conditions that existed at the close of World War II. Explain.
- b. Explain why the success of the supplementary security reserve plan would depend upon (1) limitation of the supply of reserve eligible securities and (2) interest rates that varied in response to market supply and demand.
4. "We have reached a situation where private-bank credit represents all but a small fraction of our total effective circulating medium. This gives us an economy in which significant disturbances of equilibrium set in motion forces which operate grossly to aggravate, rather than to correct, the initial maladjustments." (H. C. Simons, *A Positive Program for Laissez Faire*, Chicago, 1934, p. 15.)

- a. Explain the nature of this criticism of the present banking system.
- b. How would 100-percent banking operate to remedy these defects?
- c. What handicaps would it entail?
5. a. Why is Federal Reserve credit sometimes called "high-powered" money?
- b. Did the Federal Reserve banks themselves hold any excess or surplus reserves at the close of 1951? If so, how much? How much additional credit could they then have supported?
6. "Now that gold coin is no longer in circulation . . . and an internal drain cannot take place, the reserves [of central banks] are required to meet possible deficits in the balance of international payments." (*Second Interim Report of the Gold Delegation of the League of Nations, Geneva, 1931, p. 16.*)
 - a. Is this the only function of central bank reserves?
 - b. How do reserves from the viewpoint of the individual bank differ from reserves from the viewpoint of the banking system?
7. a. "The dominance of the . . . central bank . . . rests entirely on the fact that it commands the only important body of funds which is alternately immobilized and invested without regard to the pecuniary gains and losses which result from such procedure." (C. O. Hardy, *Credit Policies of the Federal Reserve System*, Washington, 1932, p. 31.) Explain. Of what do the funds consist?
- b. "The fact that it is the 'lender of last resort' hinders the use of discretionary pressures by the central bank." Explain.
- c. "Not only do the Reserve banks not depend for their lending power on member banks, but they themselves are in a position to increase or decrease the lending power of those banks. The Federal Reserve banks, as creators and extinguishers of reserve funds, are in a position to exert an influence on the cost and volume of bank credit." Explain.

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CHAPTER 14

Instruments of Control over the Monetary Stock

IN THE preceding chapter the manner in which the Federal Reserve System controlled the stock of money was discussed in general terms. It will be recalled that the principal factor limiting the money-creating powers of the commercial banks is the legal reserve ratio. The chief vehicle through which the Reserve System exercises control over the quantity of money is through its actions designed to alter the size of the banks' reserves.

In this chapter a detailed examination will be made of the manner in which the System's operations affect the capacity of the banks to acquire earning assets. Historically, the central bank has controlled the size of the monetary stock by exercising measures designed to alter bank reserves and hence the capacity of banks to lend and invest. These measures are aimed at controlling the over-all size of the monetary stock and are frequently characterized as "quantitative" credit controls. In recent years the Reserve System has supplemented its quantitative credit control instruments with a set of tools designed to affect the movement of money into selected areas of economic activity such as security trading, consumer credit, and real estate credit. Since the primary aim of these newer instruments of central bank control is not to control the over-all size of the monetary stock, they are called "selective" credit controls.

■ REDISCOUNT OPERATIONS

As commercial banks write up additional deposits in acquiring earning assets with a given volume of reserves, increasing amounts of the latter are tied up in legally required reserves. Ultimately, when the banks have utilized all their excess reserves, deposit expansion must cease. By borrowing from the central bank, the banks can augment their legal reserves and continue to write up additional deposits. On the other hand, if the banking system has no excess reserves and some fraction of deposits is converted into currency, the system will be subjected to a loss of reserves and a deficit in its legal reserves. Given a reserve deficiency, the banks can reduce their deposits by reducing their earning assets. This action may be undesirable since it would put strong downward pressure on the monetary stock, prices, and economic activity in general. By borrowing from the central bank the banks can meet their reserve deficiency without reducing their loans and investments. Thus by borrowing from the Reserve banks the commercial banks can increase their reserves and overcome a reserve deficiency without reducing their deposits or they can use the additional excess reserves to expand their loans and investments. The loans the Reserve banks make to member banks and at times to nonmember banks may take the form of a rediscount or an advance.

A *rediscount* is made to a bank by accepting from it promissory notes and other negotiable instruments which the bank had previously discounted for its customers. The borrowing bank endorses the paper and sends it to the Reserve bank. The latter discounts it and credits the borrowing bank's reserve account. In effect, the borrowing bank sells its customer's paper to the Reserve bank. The borrowing bank, however, by endorsing its paper is liable to the Reserve bank in the event the maker of the note does not pay it upon maturity.

An *advance* is granted to a bank by the Reserve bank on the security of the bank's own promissory note. The bank's promissory note in turn is secured by the deposit of collateral with the Reserve bank. The member bank's promissory note is discounted at the rate established by the Reserve bank, and the proceeds are credited to the reserve account of the borrowing bank.

The discount differs from an advance only in form. The substance of these borrowing operations is the same; the borrowing bank's reserve account is increased as can be seen from the balance sheet changes below, which are stated in millions of dollars.

REDISCOUNT OR DIRECT ADVANCE

Commercial Bank

<i>Assets</i>		<i>Liabilities</i>	
Reserve balances	+1.0 ^a	Bills payable (rediscount) or Notes payable (direct advance)	+1.0

Federal Reserve Bank

<i>Assets</i>		<i>Liabilities</i>	
Rediscounts or advances	+1.0	Deposits due to banks	+1.0 ^a

^a To be strictly accurate, the discount should be deducted so that reserve balances would not be equal to the face amount of the borrowing.

In practice, banks have resorted to direct borrowing on their own notes secured by collateral in preference to rediscounting. Direct advances are more convenient both for the borrowing bank as well as the Reserve bank.

By borrowing from a Reserve bank the commercial bank increases its reserves. The deposit credit which it receives may serve to restore a legal reserve deficiency or may be used to support an increase in its deposit liabilities as it makes additional loans and investments. On the other hand, the borrowing bank may withdraw its deposit credit with the Reserve bank by obtaining Federal Reserve notes which are added to its vault cash to meet demands from its depositors for currency.

It was the intent of the majority of the founders of the Federal Reserve System that the central bank would not actively control the stock of money. Most of the supporters of the proposed central bank viewed the legislation as the embodiment in law of a banking structure within which the commercial loan theory could be put into practice. In their view, as long as the banks granted short-term self-liquidating loans on the security of notes, drafts, and bills of exchange arising out of commercial transactions, the solvency of the banking system was assured. Moreover, it was argued that increases in the stock of money resulting from self-liquidating bank loans would not lead to inflation since the newly created money would be matched by a corresponding amount of new production appearing on the market.

Thus, most of the supporters of the new banking statute believed the central bank would not actively control the stock of money but would merely announce the terms on which it would rediscount short-term notes and bills of exchange arising out of commercial

transactions. Thereafter, the demand for central bank credit would arise mainly at the initiative of the member banks. If these banks exhausted their lending power and were, therefore, unable to finance the legitimate needs of business they could augment their reserves by rediscounting with the Reserve banks. On the basis of the additional reserves the banks would be enabled to expand their loans and deposits. If the commercial loan theory was strictly adhered to, the needs of commerce and industry would determine the size of the monetary stock. The Reserve System would be passive, merely announcing the terms of rediscounting. The member banks would, at their initiative, utilize the rediscount facilities of the central bank.

If commercial banks can rediscount on their own initiative, they automatically can adjust their reserves and hence their capacity to create money. If this situation existed, the monetary authorities would have little power to control the money stock. In practice, however, there are a number of means available to the Federal Reserve authorities to control the volume of rediscounts.

ELIGIBILITY

Originally, the Federal Reserve Act prescribed rigid legal limitations on the kind of paper that was eligible for obtaining Federal Reserve credit. Commercial paper, to be eligible for rediscount or for an advance, had to be in the form of promissory notes or bills of exchange which had been or were to be used to provide working capital for business and agriculture. At the time of discount such paper could not have a maturity in excess of 90 days except for agricultural paper, which, owing to the longer production period, could have a maturity up to 9 months. Loans representing fixed-capital investment or for carrying or trading in securities, except United States Government obligations, were not eligible for rediscount.

The theory underlying the original eligibility rules was that a central bank should acquire only short-term self-liquidating agricultural, industrial, or commercial paper which was originally created for the purpose of providing funds for producing, purchasing, carrying, or marketing of goods. The funds to pay off such loans were expected to become available upon the completion of the business transaction represented by the paper. Thus, it was reasoned, the funds of the central bank would be put into use only at times when they were required by business and they would flow back to the central bank as soon as the need had passed.

With the passage of time, it became increasingly evident that

restricting commercial and Federal Reserve bank loans to commercial paper of the commercial loan theory variety was not effective in preventing too much lending in boom times and it hindered adequate assistance by the Reserve banks to the banking system in times of depression when there was a dearth of eligible paper.¹ More and more it was recognized that the liquidity of any asset for the banking system as a whole depends upon the ability and willingness of the Reserve banks to buy it or to lend upon it and to issue money or bank reserves in exchange. It was soon evident that the liquidity of the banking system is enhanced by broadening the Reserve banks' lending power.

The latent recognition of the strategic position which the central bank plays in providing liquidity to the banking system has resulted in a widespread broadening of the type of assets on which the Reserve banks may lend. In addition to rediscounting eligible paper, the Reserve banks are permitted to extend advances to member banks secured by collateral in the form of eligible paper or United States Government obligations. These advances may run for 90 days; in practice, most of the advances have been secured by government obligations. As long as commercial banks have large holdings of government securities, as they presently do, they need not worry about the eligibility of their other assets.

Under regulation of the Board of Governors Reserve banks may extend advances to member banks upon their demand or time notes having maturities of not more than 4 months. These advances may be secured by any collateral satisfactory to the Reserve banks. In extreme circumstances, groups of five or more member banks may borrow from Reserve banks for indefinite periods "on such collateral as may be agreed upon." Nonmember banks may borrow up to 90 days on their own promissory notes secured by government obligations.

In effect, the Federal Reserve banks now stand ready to extend credit on a wide variety of assets. Thus, the entire theory upon which rediscount was originally based has been virtually abandoned. Ineligible as well as eligible paper is now admitted to the Reserve banks. There remains one token tie to the older doctrine of eligible paper. Advances by the Reserve banks to member banks not secured by eligible paper or United States Government obligations are to bear an interest rate of not less than $\frac{1}{2}$ of 1 percent above the highest prevailing rediscount rate.

¹ See Chap. 9, pp. 206-207, for a more detailed evaluation of the commercial loan theory.

ACCEPTABILITY

When the Federal Reserve Act was passed, there were varied opinions as to the rights of a member bank to borrow from the Reserve banks. Some claimed that any member bank with eligible paper had the right to borrow at its Reserve bank, subject only to the limitation that it could not absorb more than its fair share of the Reserve bank's lending capacity. The Reserve System and the regional Reserve banks have insisted that rediscount of eligible paper is not mandatory upon them but is merely permissive. They have insisted that the assets not only must be eligible but also must be acceptable. In 1933 the act was amended to make Reserve bank lending explicitly permissive. The law also was revised to establish standards upon which the Reserve banks would decide to extend or refuse loans. Thus, the Banking Act of 1933 requires that rediscounts shall be made with due regard for "the maintenance of sound credit conditions, and the accommodation of commerce, industry, and agriculture. Each Federal Reserve bank shall keep itself informed of the general character and amount of the loans and investments of its member banks with a view to ascertaining whether undue use is being made of bank credit for the speculative carrying of or trading in securities, real estate, or commodities, or for any other purpose inconsistent with the maintenance of sound credit conditions; and in determining whether to grant or refuse advances, rediscounts, or other credit accommodations, the Federal Reserve bank shall give consideration to such information." The Board is empowered, after opportunity for a hearing, to suspend from the use of the System's credit facilities a member bank making undue use of bank credit.

While it is conceivable that the Reserve banks could adjust their lending by varying their definitions of assets acceptable for rediscount, they have not done so in practice. Thus, a bank with satisfactory collateral can count on borrowing. In the main, the Reserve banks have depended upon changes in discount rates, in legal reserve requirements, and open-market operations to control the stock of money.

RATE POLICY

The classic check on the expansion of bank reserves through rediscounts is variation in the rediscount rate. Each Reserve bank is empowered to fix its discount rates "subject to review and determination by the Board of Governors"; these rates must be

established every 14 days or oftener if deemed necessary. Legally, the Board has the power when it deems necessary not merely to pass upon rates established by a bank but also to take the initiative in their determination. Over the years it has become the general practice to try to establish a uniform discount rate at all the Reserve banks, although it may take time for a change in rates in one bank to be adopted by the other Reserve banks.²

The discount rate is the percentage which the Reserve banks charge on their loans to member and nonmember banks in connection with rediscounts and advances. Thus, a commercial bank which operates with borrowed reserves is subject to a financial penalty consisting of the interest on its borrowing from the central bank. By raising or lowering the rediscount rate the Reserve banks can make it more or less expensive for commercial banks to obtain additional reserves by discounting commercial paper or by borrowing.

The effect of changes in these rates upon the volume of rediscounting by commercial banks has been the center of differences of opinion. If commercial banks own earning assets yielding less than the rediscount rate, the rediscount rate becomes a penalty rate. In other words, a penalty rate is a rediscount rate which makes it profitable for commercial banks to refrain from expanding loans rather than to rediscount. If the rediscount rate were at penalty levels, the commercial banks would find it financially profitable to reduce their loans and investments and use the proceeds to pay off their rediscounts. Alternatively, the banks would attempt to recover the costs of borrowing by raising the rates they charge on their loans to customers. This would presumably cause some reduction in borrowing from commercial banks, thereby reducing the size of the monetary stock.³

At the other extreme, a low rediscount rate provides an incentive to banks to rediscount in order to augment reserves since rediscounting costs less than the yield obtained by holding or increasing the earning assets.

Changes in the rediscount rate, as a symbol of Federal Reserve policy, may have important psychological effects. They reflect the recognition by a group of well-informed and responsible officials of a change in the credit situation. Thus "tight" money conditions evidenced by a higher rediscount rate may result in a changed attitude upon the part of bankers toward further loan expansion. Even

² For several years in the early 1920's, some Reserve banks used rediscount rates that rose progressively with the volume of borrowing by one member bank. The progressive rate was abandoned after severe criticism by the member banks.

³ See Chapter 24 for a more detailed discussion of the effect of changes in interest rates upon the demand for funds.

though customers' borrowing rates may not rise, bankers may scrutinize borrowers more carefully and eliminate the less desirable loan applications. To the extent that this happens, a rise in the rediscount rate may restrict changes in the stock of money even though interest rates fail to rise enough to curtail borrowing. Conversely, a reduction in the rediscount rate may be regarded as an indication of an easier credit policy and may lead to more lenient lending terms by banks even though interest rates do not fall.

The role of the rediscount rate has varied considerably in the history of the Federal Reserve System. In the early years of the System, when banks acquired reserves primarily by discounting, the rate was regarded as the principal tool for making Reserve policy effective. Borrowing and discounting have not been major means of procuring additional reserves for some time; consequently, the discount rate has played a relatively minor role. A large inflow of gold during much of the thirties built up substantial excess reserves. The growth of government security holdings in the late thirties and especially during the war resulted in member banks adjusting their reserve positions by buying and selling government securities instead of by borrowing or discounting commercial paper. For this reason, the discount rate has become largely a symbol of Federal Reserve policy and a supplement to other instruments.

Even in the early days of the Federal Reserve System, rediscount rate policy was not an effective tool of monetary control. Unless it is a penalty rate, the rediscount charge cannot be considered an effective obstacle to borrowing from the central bank. It has been difficult to employ a rediscount rate at the penalty level under the Federal Reserve Act. In many cases the divergence in customers' loan rates between country and city banks within a Reserve district is such that a penalty rate for the city banks might be 2 percent whereas a penalty rate for the country banks would be 6 percent. In this case, a rediscount rate high enough to penalize the country banks might be prohibitively high for the city banks. At the same time, it has not been practicable to charge country banks a higher rediscount rate than the city banks because this serves to arouse the country banks to claim they were discriminated against. Moreover, country banks can circumvent the higher rediscount rate charged them by turning to their city correspondents for accommodation. Since customers' rates vary greatly in different parts of the United States, a penalty rate would require marked differences in discount rates between the different districts as well as within a district. Considerations similar to those preventing intradistrict difference in discount rates have prevented putting interdistrict differentials in

rates into effect. On more than one occasion the Federal Reserve System has been threatened with political reprisal for penalty rates.

THE REDISCOUNT PREJUDICE

The Federal Reserve authorities place a good deal of emphasis on the reluctance of commercial banks to show indebtedness in their financial statements. It is asserted that the sentiment against showing indebtedness leads banks to repay their borrowing as quickly as possible. Thus, Burgess states the tradition against continuous borrowing is well established and it is the policy of the Reserve Banks to maintain it.⁴

It should be apparent that if the tradition against continuous borrowing from the central bank does exist, the monetary authorities need not worry about the effectiveness of the rediscount rate. As long as commercial banks are reluctant to borrow continuously from the Reserve banks, the level of the rediscount rate is not a matter of great importance. If the rate is not raised sufficiently to become a penalty rate, commercial banks will not attempt to augment their reserves by borrowing from the Reserve banks. But by the same token a reduction in the discount rate would not encourage banks to increase their reserves by borrowing from the central bank. On the one hand, the tradition against continuous borrowing by commercial banks would enable the monetary authorities to control bank reserves even though the discount rate was not at the penalty level. On the other hand, a reluctance to borrow even though rediscount rates were lowered would thwart the monetary authorities' desires to bring about an increase in the stock of money. Even assuming that the prejudice against borrowing may exist among commercial banks, the monetary authority's control over the monetary stock should be clear and unambiguous and should not have to depend on the behavior of the banks. Thus, the rediscount prejudice is a poor vehicle for control by the control bank.

MORAL SUASION

The term "moral suasion" refers to a whole series of actions that the Reserve banks may take to influence the volume of member bank borrowing, the lending practices of commercial banks and sometimes of other lenders. In its mildest form, moral suasion refers to any purposful influences on credit expansion by

⁴ W. R. Burgess, *The Reserve Banks and the Money Market*, 2d ed. (New York, 1946), pp. 219-220.

the Reserve System through oral and written statements as well as appeals or warnings to member banks and at times to other lenders. If these exhortations fail, Reserve bank loans to a bank may be rationed, and in extreme cases a bank's privilege of borrowing from the Federal Reserve System may be suspended if it is found to be making undue use of Reserve bank credit for purposes inconsistent with the objective of the monetary authority.

Moral suasion is also used in attempts to arrest contraction of credit and induce an expansion. Member banks are told that the Federal Reserve approves of liberal credit extensions, that its lending facilities are freely and cheaply available to member banks who will make loans, and that, in general, banks should not be deterred by the tradition against borrowing. As a means of arresting credit contractions and inducing expansion, the efficacy of moral suasion seems to be limited. Member banks may be permitted to borrow freely, but they may refuse to take advantage of the opportunity.

In our country with its thousands of banks and other lenders there is a lesser degree of uniformity of view and practice than is true in other countries. Hence, it is difficult to attain the degree of cooperation among the institutions to which moral suasion is directed that would be true in Canada or Great Britain. Moral suasion suffers from the disadvantage of swaying the conscientious and not affecting those who are uncooperative. There is the further risk that it may be used as a substitute for the more important measures available to the central bank to alter the stock of money. In general, experience in both inflationary and deflationary times seems to show that moral suasion is not significant unless accompanied by vigorous use of other credit control instruments. In any case, it is difficult to assess the specific effectiveness of moral suasion in quantitative terms.

From the preceding discussion it is clear that Reserve banks have only a very imprecise control over the volume of their own loans to member banks. The Reserve banks fix their discount rates and the other conditions of their lending, but member banks are the ones that make the decision as to the amounts to be borrowed under the terms fixed by the Reserve banks. The only exception to this occurs under the very rare circumstances when the Reserve banks limit the amount of their loans by rationing. The ability of these banks to induce an expansion of loans from themselves is especially limited; they may reduce their discount rates to a very low level and implore banks to borrow, but the banks may be unresponsive. This is particularly true during periods of depression when banks are reluctant to grant loans on an extensive scale.

■ INDUSTRIAL ADVANCES

It was the intention of the framers of the Federal Reserve Act that the Reserve banks should be bankers' banks; their dealings with the general public were to be limited to the purchase and sale of bills of exchange and certain types of securities in the open market. The rash of bank failures after 1929 shattered the public's confidence in the banking system. For their part, bankers attempted to improve their liquidity and safety by reducing outstanding loans and severely restricting the amounts of new loans. Thus, as the depression deepened there were increasing complaints from businessmen that they were unable to obtain loans from their banks to finance their current operations. Congress responded to these pressures by creating a number of government lending agencies and passing several amendments to the Federal Reserve Act which authorized the Reserve banks to extend a limited amount of direct advances to individuals and business concerns.

On July 21, 1932, section 13 of the act was amended to permit Reserve banks, when given an affirmative vote by five members of the Board, to discount for any individual, partnership, or corporation paper which is technically eligible for rediscount and is satisfactorily secured. The borrowing firm must prove it is unable to secure adequate credit accommodation from other banking institutions. Very few loans were made under the amendment, and authorization of such loans by the Board of Governors expired July 31, 1936.

The Emergency Banking Act of March 9, 1933, authorized the Reserve banks under regulations of the Board, to make 90-day advances to individuals and firms—including banks—on the security of direct obligations of the government. This provision, designed to assure a supply of funds in communities without banks, was hardly utilized because banks reopened rapidly enough to meet current demands for loans. The Reserve banks extended to loans made to banks under this provision the same low rates as applied to other rediscounts and advances secured by direct government obligations or eligible guaranteed government obligations. Thus, nonmember banks are enabled to borrow at the Reserve banks under the provisions of this law on the same terms as are member banks.

Another effort to enable the Reserve System to meet the needs allegedly created by the cautious lending policy of banks resulted in the addition of section 13b to the Act in June 1934. Under this section the Reserve banks were authorized to extend credit for work-

ing capital to established businesses unable to obtain credit on a reasonable basis from other sources. These loans could be made for as long as 5 years and could take one of two forms: (1) a direct loan to a business firm or financing institution or (2) an agreement by the Reserve bank to purchase obligations from any financial institution which makes a loan, providing the financial institution agrees to assume at least 20 percent of any loss which is assumed. The act stipulated that an Industrial Advisory Committee be appointed by the Reserve bank in each district to review loans and make recommendations. The gross amount of loans under section 13b is limited to the combined surpluses of the Reserve banks on July 1, 1934, plus any amount not exceeding \$139 million which might be paid over to the Reserve banks by the Secretary of the Treasury.⁵ The volume of direct loans to industry under section 13b has been small. Up to the close of 1951 the Reserve banks had approved 3,736 loans amounting to \$711 million. The bulk of these had been approved in 1934 and 1935.

Direct loans to industry by the Reserve banks increase the volume of Reserve bank credit, hence bank reserves. The Reserve bank, in granting a loan to a business firm, gives the borrower a check against itself. The borrowing firm, in turn, deposits the check with its commercial bank. The latter presents the check to the Reserve bank for payment. The books of the commercial bank show an increase in liabilities, due to depositors, as well as an increase in assets, reserve balances. Part of the added reserves must be set aside against the new deposit, and the remainder are excess reserves. The books of the Reserve bank show an increase in assets, loans to industry, and

Commercial Bank

<i>Assets</i>		<i>Liabilities</i>	
Reserve balances	+1.0	Due to depositors	+1.0

Federal Reserve Bank

<i>Assets</i>		<i>Liabilities</i>	
Loan to industry	+1.0	Deposits due to banks	+1.0

an equivalent increase in liabilities, deposits due to banks.

The proceeds of the check against the Reserve bank may instead not be credited to the commercial bank's reserve account. The proceeds may be withdrawn from the Reserve bank in the form of

⁵ The Secretary of the Treasury was authorized to return to the Reserve banks an amount not exceeding the sum of \$139 million which the banks had been required to subscribe for stock of the FDIC in 1933.

currency, or they may be deposited with correspondent banks. If the latter measures are used, the commercial bank obtains currency or deposits with a correspondent bank without having to draw down its reserve account with the Reserve bank. Regardless of the method employed, the reserves of the commercial banks are expanded.

Granting the Reserve banks' authority to extend direct loans to industry was not intended to provide the Reserve System with an instrument to alter bank reserves. Rather, the power to grant direct loans to industry was extended in the expectation that it would increase the willingness of commercial banks to extend loans at a time when the banking system was reluctant to make loans. Upon receipt of applications for direct loans the Reserve banks would try to place these loans with commercial banks. After reviewing the application, banks would often decide to extend the loan. The fact that the Reserve banks were willing to extend loans played some part in helping bankers get over their fears of loan risks which had built up during the depths of the depression. Moreover, the commitment from the Reserve banks to lend funds assisted would-be borrowers in their dealings with commercial banks.

■ OPEN-MARKET OPERATIONS

As was pointed out earlier, it appears to have been the intent of the founders of the Federal Reserve System that the central bank would not actively control the stock of money. The needs of commerce and industry would determine the size of the monetary stock. The Reserve System would be passive, merely announcing the terms of rediscounting; the member banks would, at their initiative, utilize the rediscount facilities of the System.

In the period from 1914 to 1922 the Reserve banks purchased government securities in the open market chiefly to provide themselves with earning assets so that they would be able to pay operating expenses as well as dividends to the stockholding member banks. At various times during the next few years, open-market operations were employed as an instrument of monetary policy. These operations were not undertaken independently but were employed to make the rediscount rate effective by altering the reserves of the member banks, thus forcing them to rediscount or enabling them to repay their indebtedness to the Reserve banks. Following the stock market crash, the Reserve System engaged in open-market operations as an independent instrument of monetary policy. Soon, open-market operations became the key weapon in the Reserve

System's arsenal of instruments to control the stock of money. Open-market operations were regarded as active means of altering the size of the money stock and not as an auxiliary weapon designed to make rediscount rate changes effective. Thus, the use of open-market operations as an instrument of Federal Reserve policy has developed far beyond the expectations of the System's founders. Open-market operations have supplanted, and not simply supplemented, rediscount policy.

There are several striking differences between rediscounts and open-market operations. In rediscounting the commercial bank takes the initiative in deciding whether to utilize the facilities of the central bank under the terms announced by the Reserve System; in the traditional open-market operation the Reserve System takes the initiative and decides how much it chooses to buy or sell. A rediscount involves a personal creditor-debtor relationship between the Reserve bank and the rediscounting bank; thus, rediscount results in indebtedness by the borrowing bank. Open-market operations are impersonal as in the case of the purchase or sale of any security; they do not create any indebtedness for the commercial bank. Rediscount is a regional phenomenon in which Reserve bank credit is altered in the district in which the operation is conducted. As a general rule, open-market operations are concentrated in the principal money markets, particularly New York, and the alteration in Reserve bank credit is felt first in New York banks; the effects then diffuse themselves slowly or rapidly throughout the country.

What types of obligations may the Reserve banks buy and sell in the open market? The Federal Reserve Act as amended specifies the kinds of securities which the Reserve banks may acquire. These may be classified as follows: (1) cable transfers, bankers' acceptances, and bills of exchange of the kinds and maturities eligible for rediscount; (2) direct obligations of the United States Government as well as obligations fully guaranteed by it; (3) obligations of state and local governments issued in anticipation of tax receipts or other assured revenues, which have a maturity not more than 6 months from date of purchase; (4) bonds of the Federal Farm Mortgage Corporation, of the federal land banks, and of the Home Owners Loan Corporation with maturities not in excess of 6 months from date of purchase. At times in the past the Reserve System's dealings in bankers' acceptances were important. In recent years, however, open-market operations have been transacted almost exclusively in federal securities. In conducting open-market operations the Reserve banks are permitted to deal at home and abroad with banks, recognized security dealers, business and financial corporations, and indi-

viduals. In practice, dealings have been confined to security dealers and financial institutions.

Who is responsible for the formulation of open-market policies? In the early days of the Federal Reserve System, each Reserve bank bought and sold securities as it saw fit, mainly with a view to its own need for earning assets. The uncoordinated activities often led to chaotic conditions resulting in competition by the individual banks for securities. In 1922 an Open Market Committee was created, consisting of the governors of the New York, Boston, Philadelphia, Chicago, and Cleveland Reserve banks. This committee synchronized purchases and sales of securities for the banks and made recommendations as to policies to be pursued. The following year the Federal Reserve Board created an Open Market Investment Committee of Governors which formulated policy with the Board's approval; the committee took the initiative in buying and selling securities which were apportioned to the individual Reserve banks on a voluntary basis. In 1930 the committee was enlarged to include a representative from each of the twelve banks. The decisions of the reconstituted Open Market Policy Conference were subject to the Board's approval, and each bank retained the option of participating. The mechanism (without change in personnel or function) was first written into the law in the Banking Act of 1933.

The Banking Act of 1935 achieved greater centralization over open-market operations. Control over open-market activities was placed in the hands of a twelve-man Federal Open Market Committee consisting of the seven members of the Board of Governors and five members elected by directors of the Federal Reserve banks. The decisions of the committee are final, and participation in the System's operations by the individual Reserve banks is compulsory. Between meetings of the full committee an executive committee issues directions. The actual day-to-day operations are executed by a manager appointed by the Federal Reserve Bank of New York which is designated as the agent of the committee.

The term open-market operations is not always clear to the uninitiated. In its broadest sense it is used to describe any purchases and sales of securities by the Reserve System. Within the broad meaning of this term we can distinguish three distinct types of transactions which include (1) purchases and sales of securities in the securities markets from anyone but the Treasury at the Reserve System's initiative; (2) purchases and sales of securities from anyone but the Treasury on the initiative of the security purchaser or seller; (3) purchases and sales of securities directly with the Treasury on

the Treasury's initiative. We shall examine the effects of these operations, in turn.

TRADITIONAL OPEN-MARKET OPERATIONS

The purchase and sale of securities by the Reserve banks alter the reserves of commercial banks whether they are maintained as balances at the Federal Reserve banks, whether they are held as balances with correspondent banks, or whether they are kept as currency in the bank's vault. This proposition will be demonstrated by examining the balance sheet changes on the books of the commercial bank and the Reserve bank resulting from open-market purchases and sales of \$1 million.

Open-Market Purchase The Reserve bank pays for its security purchase by drawing a check against itself which it turns over to the security seller. (1) If the security seller is a bank, it presents the check to the Reserve bank for payment. As can be seen below, the bank's balance sheet shows a decrease in its asset, government bonds, and an increase in its asset, reserve balances. The Reserve bank's bond holdings increase as do its liabilities, deposits due to banks.

Commercial Bank

<i>Assets</i>		<i>Liabilities</i>	
Reserve balances (all of which are excess reserves)	+1.0		
Government bonds	-1.0		

Federal Reserve Bank

<i>Assets</i>		<i>Liabilities</i>	
Government bonds	+1.0	Deposits due to banks	+1.0

(2) If the security seller is an individual, he will deposit the check against the Reserve bank with his bank. The latter presents the check to the Reserve bank for payment. The books of the Reserve bank will show an increase in government bonds and an increase in deposits. The commercial bank's books will show an increase in deposits due to customers as well as an increase in reserve balances. Since the bank's deposits have increased, part of the added reserve balances must be set aside to meet the legal reserve requirement against the additional deposit. Assuming a reserve requirement of 20 percent, the bank acquired additional reserves of \$1 million but only \$800,000 of this amount is excess reserves.

Commercial Bank

<i>Assets</i>	<i>Liabilities</i>
Reserve balances (of which \$800,000 are excess reserves)	Due to depositors
+1.0	+1.0

In our illustrations we have assumed that the proceeds of the checks against the Reserve bank were deposited in the bank's reserve account at the Reserve bank. Of the proceeds, \$800,000 may be deposited with correspondent banks or the \$800,000 may be withdrawn in the form of currency. If the latter measures are employed, the commercial bank obtains currency or deposits with a correspondent bank without having to draw down its reserve account at the Federal Reserve bank. Regardless of which method is employed, the reserves of the commercial banks are expanded, thereby enabling them to create additional deposits in payment for newly acquired earning assets.

Open-Market Sale When the Reserve bank sells securities in the open market, the purchaser of the securities must make payment to it. (1) If the security purchaser is a bank, it draws a check against itself and turns it over to the Reserve bank. When the Reserve bank requests payment of the check, the commercial bank's deposit balances with the Reserve bank may be debited. The bank's balance sheet will show an increase in government bonds and a decrease in its asset, reserve balances. The Reserve bank's bond holdings decrease as do its deposits due to banks.

Commercial Bank

<i>Assets</i>	<i>Liabilities</i>
Reserve balances	-1.0
Government bonds	+1.0

Federal Reserve Bank

<i>Assets</i>	<i>Liabilities</i>
Government bonds	Deposits due to banks
-1.0	-1.0

(2) If the security purchaser is an individual, he will draw a check against his deposit account in a commercial bank and turn it over to the Reserve bank. In order to collect, the Reserve bank presents the check to the bank on which it is drawn. The commercial bank's deposit balances with the Reserve bank may be debited. Thus, the commercial bank's balance sheet will show a decrease in reserve

balances as well as a decrease in deposits due to customers. In this illustration the commercial bank loses \$1 million in reserves and \$1 in deposit liabilities. Since the bank does not have to keep \$200,000 in reserves (20 percent) against the deposits that have been withdrawn, it only loses \$800,000 in excess reserves. The books of the Federal Reserve bank will show the same changes as noted above—its bond holdings and deposits due to banks will fall by a like amount.

Commercial Bank

<i>Assets</i>		<i>Liabilities</i>	
Reserve balances	-1.0	Due to depositors	-1.0

In our illustrations we have assumed that the proceeds of the checks against the commercial banks were collected by debiting their reserve accounts at the Reserve bank. The commercial bank could make payment by drawing a draft against its balances with a correspondent bank or by shifting currency to the Reserve bank. Regardless of the means of payment employed, the effect of an open-market sale is to reduce the reserves of the commercial banks and, hence, to reduce their capacity to create deposits.

OPEN-MARKET OPERATIONS NOT ON THE INITIATIVE OF THE RESERVE SYSTEM

There is a class of Federal Reserve operations which have some of the characteristics of traditional open-market operations as well as of rediscounts. These operations are similar to rediscounts in that once the terms of purchase and sale are established by the Reserve System the volume of sales or purchases is determined by the commercial banks and security dealers. In the traditional open-market operation the amount of purchases or sales is determined by the Open Market Committee. These operations are similar to open-market transactions in that they affect bank reserves in the same manner as a traditional open-market operation. Moreover, in these transactions the bank does not incur any indebtedness once it sells the security to the Reserve banks whereas a rediscount creates indebtedness for the rediscounting banks. Because of the hybrid nature of these transactions, some authors prefer to describe them as involuntary open-market operations.

The Federal Reserve System purchases bankers' acceptances which are found among the assets on the Reserve banks' statement under the caption "bills bought." While Reserve banks' holdings of accept-

ances were relatively important at times in the past, they have held negligible amounts since the middle thirties. The Reserve banks do not take the initiative in buying acceptances. They post a buying rate subject to the approval of the Board and stand ready to buy any quantity of acceptances of approved quality from commercial banks or from a select list of dealers at the posted buying rate. The Reserve banks purchase all bankers' acceptances under the supervision of the Federal Open Market Committee as one phase of general open-market policy. Ordinarily, the Reserve banks hold acceptances to maturity although they may contract to resell them to the original seller within 15 days from the date of purchase.

The purchase (or in rare cases, sale) of an acceptance by the Reserve banks from a bank or dealer has the same effect on bank reserves as the purchase (or sale) of government bonds in the illustrations of traditional open-market operations. By substituting bankers' acceptances for government bonds in the previous examples we can conclude that acceptance purchases by the Reserve banks increase bank reserves and sales of acceptances by Reserve banks decrease bank reserves.*

In Chapter 10 it was pointed out that the Reserve System's buying rate on acceptances in the 1920's was low relative to other rates in the money markets. That is to say, the Reserve banks offered a higher price for acceptances than other investors. This policy was deliberately pursued to encourage the establishment of a broad acceptance market in the United States. In protecting the newly created money market, the Reserve System stood ready to purchase all acceptances offered at its posted buying rate. In the twenties about 50 percent of all acceptances found their way into the Reserve System. Not only was the attempt to establish a broad acceptance market a failure, but also the unlimited open-market purchases at the Reserve System's posted buying rate sometimes interfered with the System's attempts to pursue restrictive monetary measures.

During World War II Treasury bills were put on the same basis as bankers' acceptances. In April 1942, as part of a program to fix a pattern of rates on government securities, the Reserve banks announced their willingness to buy bills at the sellers' initiative at a constant discount rate of $\frac{3}{8}$ of 1 percent. To make it even more convenient for banks and others to buy bills, in May 1943 the

* To be strictly accurate, a bank that sells an acceptance to the Reserve bank would not receive the face value of the acceptance but the face value less the discount for x days at y rate of interest. Thus, a bank selling a 90-day acceptance at the Reserve banks' buying rate of 1 percent would receive 99.75 percent of the face value of the security.

Direct sale of Treasury securities to the Reserve banks does not affect the reserves of the commercial banks.⁷ As can be seen from the balance sheet below, the effect of such a transaction is to increase the deposits of the Treasury as well as its debt. The books of the Federal Reserve banks show increases in assets, government bonds, and increases in liabilities, deposits due to the Treasury.

Federal Reserve Banks

<i>Assets</i>		<i>Liabilities</i>	
Government bonds	+1.0	Due to Treasury	+1.0

United States Treasury

<i>Assets</i>		<i>Liabilities</i>	
Deposits with Federal Reserve banks	+1.0	Government bonds	+1.0

Open-market operations by the Reserve banks may alter the reserves of the commercial banks and the money stock, or they may alter bank reserves without immediately affecting the quantity of money. Reserve bank purchases of securities from the portfolios of investors and corporations increase bank deposits as well as the reserves of the banks. Contrariwise, sales of securities by the Reserve banks to investors and corporations decrease bank deposits as well as bank reserves. Reserve bank purchases of securities from banks increase bank reserves, but they do not affect deposits, hence do not alter the size of the money stock. Conversely, when the Reserve banks sell securities to the banks, bank reserves are decreased and the quantity of money is unaffected.

Thus, the immediate and direct effect of open-market operations by the central bank is to alter the volume of bank reserves alone or the volume of bank deposits and reserves. In addition, however, the impact of open-market operations on the monetary system may be felt in other ways. Open-market purchases tend to bid up security prices, thereby lowering their yields. The rising prices spread to other securities leading to a decline in their yields. At the same time as security yields decline, the open-market purchases increase bank reserves. The addition to their reserves enables banks to acquire additional earning assets by writing up their deposits. The banks may reduce interest rates on loans in order to encourage greater borrowing from them. Alternatively, the banks may not reduce

⁷ When the Treasury uses these funds to make payments, the reserves of the banks will be increased.

interest rates on loans, but they may relax their credit standards in passing upon loan applications. Moreover, the banks may purchase securities by creating deposits in payment for investments which they add to their earning assets. Open-market sales by the central bank have the reverse effects. Sales of securities by the Reserve System tend to depress security prices and raise yields. In addition to the restraining effects upon borrowing of a rise in interest rates, bank reserves are reduced. In the face of reduced reserves, the banks may raise rates on their loans or may impose more severe standards of credit extension or both. Moreover, if the loss of reserves is severe enough, the banks may be forced to reduce their outstanding loans or sell some of their investments.

We have seen that open-market operations alter reserves, hence the ability of banks to acquire additional earning assets. Central bank open-market activities may also affect the *willingness* of the banks to alter their holdings of earning assets. The fact that the central bank is buying or selling securities may affect expectations as to future movements of security prices. For example, open-market purchases may lead to anticipations of advancing security prices, thereby encouraging banks to make additional investments by creating deposits in payment for the securities. Central bank open-market sales may lead to anticipations of further price declines in security prices, causing hesitation among banks to acquire additional securities or in fact leading to sales of securities by the banks with attendant decreases in the monetary stock.

■ FLOAT

As we saw earlier,^{*} float represents the difference between uncollected items and deferred availability items which develops because the time schedule allows for less time than is actually consumed in collecting checks. Float represents reserve credits that have been granted by one Reserve bank to a commercial bank before the collection item could be charged to the debtor commercial bank's reserve account with its Reserve bank. The amount of float, therefore, represents an extension of Federal Reserve bank credit to the banking system and increases bank reserves. The reader will recall that in our illustration, Bank A's reserve account with the New York Reserve Bank was credited for the amount of the check on the second day after it was sent to the Reserve bank for collection. At the end of the second day, however, Bank B's

^{*} See pp. 314-317.

reserve account with the San Francisco Reserve Bank was not debited. Thus, for the banking system as a whole, bank reserves were increased. In one sense, float represents an interest-free advance to the banking system which increases bank reserves. It should be clear, however, that float is not an instrument of Reserve policy in controlling bank reserves. Rather, it is a by-product of the Reserve System's clearing and collecting mechanism. In any case, changes in the volume of float are so small they do not effectively affect Federal Reserve policy.

■ CHANGES IN RESERVE REQUIREMENTS

Changes in reserve requirements together with discount and open-market operations are the three principal tools with which the Reserve System attempts to control the stock of money. As we saw above, since 1935 the Board of Governors has the power to vary member banks' required reserves. The Board cannot decrease reserve ratios below the statutory figure (13, 10, 7, and 3 percent) nor can it increase them to more than double this figure. Within this range, changes in reserve requirements may be made applicable to any or all the groups of banks except that changes must be uniform for all banks within a group (for example, all central reserve city banks).

Unlike the Reserve System's measures of monetary control previously discussed, changes in reserve requirements do not have any direct effect upon the amount of Reserve bank credit, hence upon the absolute amount of bank reserves. The authority to change reserve requirements is a powerful instrument of monetary control because changes in reserve requirements affect the volume of excess reserves as well as the deposit-creation multiplier for the banking system. A simple example will illustrate the effects of changes in reserve requirements. Assume that the member banks have \$5 billion in reserve balances in the Reserve banks, that the legal reserve requirement is 10 percent of deposits, and that with the existing deposits outstanding the required reserves of the banks are \$2 billion. In our example the excess reserves, which amount to \$3 billion, will support a tenfold increase in deposits or \$30 billion of additional deposits. If the reserve requirements are doubled, the reserves of the banks remain at \$5 billion. In the new situation, however, required reserves increase to \$4 billion, leaving only \$1 billion in excess reserves. With the new reserve requirement of 20 percent, the \$1 billion in excess reserves will support a fivefold increase in deposits or \$5 billion in additional deposits.

It should be evident from this illustration that changes in reserve requirements are a very powerful instrument of monetary control which affect the amount of excess reserves as well as the deposit-creating multiplier. In addition, changes in reserve requirements are a blunt instrument of monetary control. When reserve requirements are changed, they apply to all banks in one of the three reserve classifications regardless of the reserve position of the individual banks. Even though there may be a large volume of excess reserves in the aggregate, some banks are likely to have none. An increase in reserve requirements, therefore, will impose hardships on the banks with no excess reserves no matter how much they may merit exceptions; the increase in reserve requirements will cause the banks with no excess reserves either to reduce loans and investments or to borrow from the Reserve banks.

Because of their powerful and blunt effects, the Reserve System has utilized changes in reserve requirements only at times when the total of excess reserves was so large that the number of deficiencies in reserves that resulted in individual cases would be very small. Because of the disturbing effects of changes in reserve requirements, they have not been used to adapt the monetary system to day-to-day changes in underlying monetary conditions. Rather, they have been generally employed to adjust the banking system to large-scale changes in the supply of bank reserves. A number of proposals have been put forward designed to supplement the flexible reserve requirement in a manner to provide the monetary authorities with a control instrument which is less blunt in its effects than the existing powers to alter member bank reserve requirements.

CEILING RESERVE PLAN

One such proposal, frequently described as the ceiling reserve plan, would empower the monetary authorities to change reserve requirements against increments of deposit liabilities. Under this plan, a change in reserve requirements would not apply to the aggregate of deposits outstanding at the time reserve requirements are changed. For each bank there would be established a ceiling on deposit liabilities based on the amount of deposits outstanding at some stated time (either a day or a period of time). The higher reserve requirement would apply only to additions to deposits above the ceiling figure. So long as deposits did not rise above this figure, the supplementary reserve requirement would be inoperative. The plan would become effective when a bank's deposits rose above the ceiling amount.

Thus, the excess reserves of the member banks would not be altered; the effect of a ceiling reserve plan would be to reduce the deposit-creation multiplier for new deposits. The incremental reserve requirement can be illustrated with the following example. Assume, as in the previous illustration, that reserve requirements are 10 percent and the member banks are required to maintain \$2 billion of reserves on the basis of their deposits outstanding. But let us assume that the banks have \$3 billion of reserves of which \$1 billion are excess reserves. With a reserve requirement of 10 percent the banks are capable of supporting a tenfold increase of deposits or \$10 billion. If reserve requirements were doubled to 20 percent, the banks would be faced with \$1 billion reserve deficiency, thus causing them to contract loans and investments on a large scale or to borrow from the Reserve banks to make up their reserve deficiency. If, instead, the monetary authority has the power to continue the existing reserve requirements on outstanding deposits but is empowered to alter the reserve requirement for increments to deposits, it could restrict bank lending without causing the sharp reduction in deposits that resulted from the doubling of reserve requirements on all deposits. Let us assume that the monetary authority continues the 10-percent reserve requirement on outstanding deposits and imposes a 25-percent reserve requirement on net additions to deposit liabilities. With excess reserve of \$1 billion, the banks could create \$4 billion in additional deposits as contrasted with \$10 billion in deposits if the 10-percent reserve requirement is maintained or an actual reserve deficiency if reserve requirements on all deposits are doubled. The plan could be set up to require a 100-percent reserve against deposit increases over the ceiling. Thus, commercial banks as a group would be prevented from expanding their deposits on a multiple basis when they had excess reserves.

SUPPLEMENTARY RESERVE PLAN

Another plan entailing increased reserve requirements for banks would require banks to hold supplementary reserves against increases in their loans. This plan would work as follows: each bank would have a ceiling of "loan assets" consisting of all loans and investments other than government securities on a given date. The monetary authority would be authorized to require banks whose "loan assets" rose above the ceiling amount to hold in addition to the reserve required under present authority a supplementary reserve equal to some percentage of the increase in their loan assets.

If a bank increased its loans by \$100,000 over the ceiling, its deposits would increase by a like amount. Assuming a 10-percent reserve requirement against deposits, required reserves would rise by \$10,000. In addition, if the reserve requirement against loans over the ceiling was set at 25 percent, the bank would have to provide an additional \$25,000 in reserves. This supplementary reserve would have to be maintained by the bank even after the deposit arising from the loan had been drawn out. Needless to say, the supplementary reserve requirement could be 100 percent or less, depending on the extent of curtailment or limitation of further expansion of bank loans and investments that is desired by the monetary authority.

The incidence of a supplementary reserve plan based on increases in loans would fall on the banks making loans and investments above the ceiling amounts whereas under the deposit increase plan supplementary reserves would be required of the banks receiving deposits in excess of the ceiling amounts.

The supplementary reserve plans were widely discussed after World War II when the monetary authority was faced with the dilemma of trying to restrict the stock of money and yet support the government security market. A plan of supplementary reserves based on increases in bank loans and investments would restrain creation of bank deposits but would insulate the market for government securities somewhat from the restriction on bank credit expansion to private borrowers.

Because the incremental (supplementary) reserve requirement, as it is sometimes called, does not affect the volume of bank reserves but merely affects the deposit-creation multiplier, it is a useful tool of monetary control for adapting the banking system to short-run changes in underlying monetary conditions. Together with changes in reserve requirements against all deposits, it would provide the monetary authority with a scalpel as well as an axe.

■ SELECTIVE CONTROLS OVER MONEY STOCK

The quantitative instruments such as discount rate changes, open-market operations, and variations in reserve requirements operate primarily by influencing the cost, the volume, and the availability of bank reserves. Selective instruments of control over the monetary stock do not operate by influencing bank reserves; their principal impact is not on the total monetary stock but on that part of the total stock of money that is utilized in one or another particular segment of the economy.

An important characteristic of the so-called selective credit controls is that though they bear directly on the conduct of lenders, they put restraints on the borrower or potential borrower by prescribing the terms on which certain kinds of loans may be made, regardless of whether the banks have scanty or abundant reserves. The selective controls over the monetary stock are supplementary to the general or quantitative controls, and their use has developed because they make it possible to restrain the flow of money into certain fields at a time when conditions in the economy as a whole are such as to make general restraints on the growth of the monetary stock undesirable.

MARGIN REQUIREMENTS

The tremendous amount of credit flowing into the stock market in the late 1920's posed the following predicament to the Reserve Board. At that time the Reserve System could have restricted the flow of bank credit into security speculation only by quantitative controls which affect bank reserves and, through them, the total stock of money. The general level of economic activity was relatively stable with little if any evidence of excessive bank borrowing to finance general business activity. The Board hesitated to use its quantitative tools to raise the cost and to reduce the availability of funds because such action might have had detrimental effects on business activity. Thus, stock speculation fed by bank credit continued. Ultimately, however, the quantitative credit control measures were used as a last resort.

The collapse of the stock market boom in late 1929 was followed by a severe decline in security prices. This decline probably contributed to the severity of the depression in the early 1930's. There was a general feeling that what was needed was a revision of the banking statutes to give the Board authority to exercise some control over the utilization of bank credit to finance security speculation.

In response to the need for an instrument to control the flow of credit into purchasing or carrying of securities, Congress, in passing the Securities Exchange Act of 1934, delegated authority to the Board of Governors to control margin requirements on security loans. The margin requirements apply to all loans granted either by banks or by securities brokers and dealers for purchasing and carrying securities (other than Treasury obligations and other exempted securities) registered on national security exchanges. The Board administers margin requirements on loans by brokers and dealers to their customers through Regulations T: Regulation U

of the Board pertains to margin requirements on loans by banks to customers who desire to purchase or carry listed securities. The minimum margin is the same in both Regulations T and U.

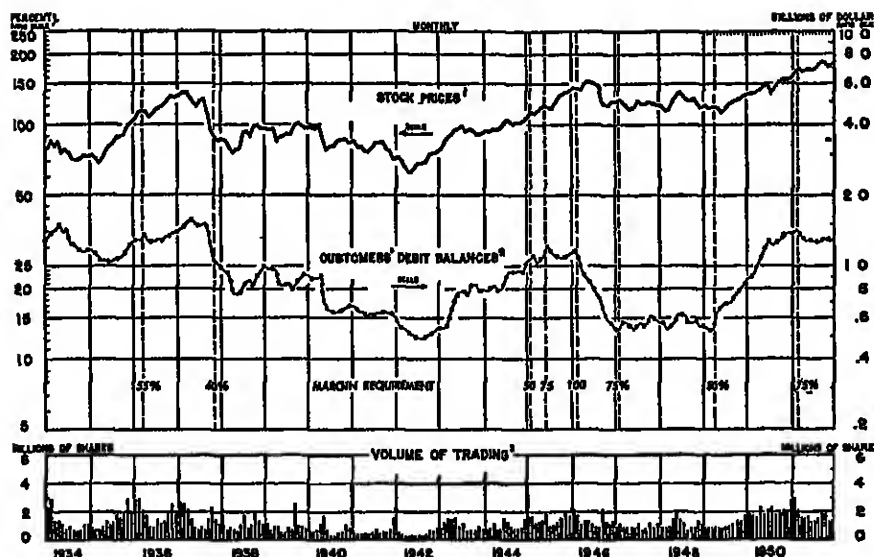
The term "margin requirement" may be defined as the proportion of the purchase price of the securities which banks and securities brokers and dealers are *not* permitted to lend. Thus, the Board has the power to fix the maximum amount which the purchaser of securities may borrow against those securities. If the margin is fixed at 50 percent, the buyer of stocks with a current market value of \$1,000 would have to pay \$500 in cash, and the securities could be used as collateral for a loan not to exceed \$500; if the margin were 25 percent, the minimum cash payment would be \$250 and the amount borrowed could be as much as \$750. Margin requirements do not apply to a loan for commercial purposes even though secured by stocks.

Stock market transactions are financed largely by the banking system either through bank loans to brokers or through bank loans to customers who wish to purchase or carry listed securities. As these loans increase, there is an increase in deposits at commercial banks, thus increasing the monetary stock. By varying margin requirements, the Board can influence the amount of credit extended for the purpose of purchasing or carrying nonexempt securities. Increasing the margin decreases the maximum amount which can be borrowed, while lowering the margin increases it. Since 1934 margin requirements have been changed nine times and the range has varied from 25 to 100 percent.

There is no conclusive evidence of the extent of the influence of flexible margin requirements on the volume of bank credit used in the security markets nor on the behavior of security prices as is evident in Figure 21. At times, security prices have risen in the face of drastic increases in margin requirements. Since there is considerable uncertainty about the course security prices would have followed in the absence of the measures which were taken, final conclusions about the efficacy of margin requirements are impossible to render.

It does not appear unreasonable to conclude that high margin requirements have had some effect in reducing the flow of new money through the securities exchanges and in keeping the general index of stock prices at a low level during a period of general inflation. Insofar as it serves to affect changes in the monetary stock and in money expenditures, control over margins on security loans appears to be a useful additional instrument of regulation in the hands of the monetary authorities.

FIGURE 21
STOCK MARKET



¹ Standard and Poor's Corp., 416 common stocks, 1935-1939 = 100.

² Member firms of New York Stock Exchange.

³ New York Stock Exchange, average daily volume.

SOURCE: Board of Governors of the Federal Reserve System.

CONSUMER CREDIT CONTROL

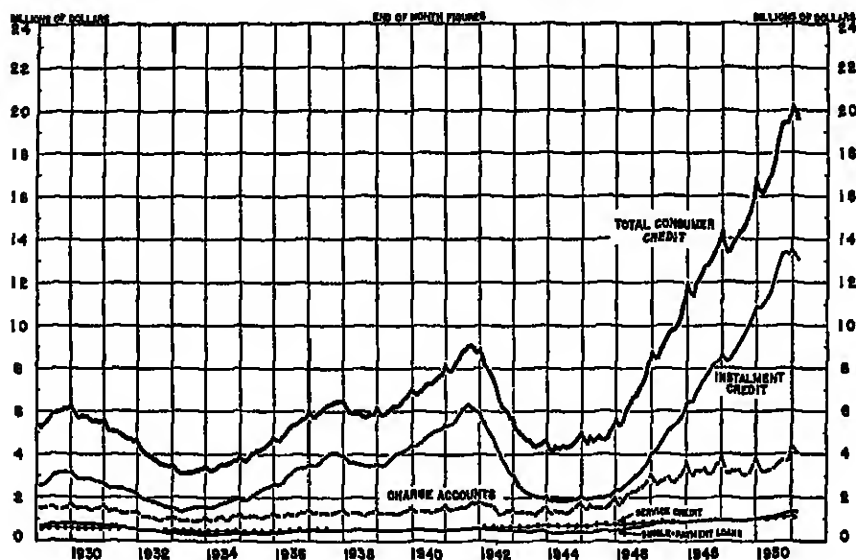
Unlike control over margin requirements, which has been in effect continuously since 1934 when it was incorporated into the Securities Exchange Act of 1934, regulation of consumer credit has been granted to the Board under specific temporary and limited authority in emergency situations. First introduced in September 1941, under an Executive Order valid during the period of national emergency, the Board's authority to regulate consumer credit lapsed in November 1947; in September 1948 the Board was empowered by Congress to restore consumer credit controls for a limited period terminating in June 1949. In September 1950, after the outbreak of hostilities in Korea, the Board was again empowered to exercise controls over consumer credit; these controls were suspended in May 1952.

Expansion in consumer credit adds directly to increases in bank deposits, hence to the stock of money. A large fraction of consumer credit outstanding is financed either directly or indirectly through

bank loans. In addition to consumer loans which are made directly by banks, a large part of the funds of sales finance companies and personal loan companies is obtained from bank loans; many retail establishments finance their accounts receivable partly through borrowing from banks. Thus, a substantial part of every dollar of increase in consumer credit results in an increase in the stock of money,

FIGURE 22

CONSUMER CREDIT OUTSTANDING
(Federal Reserve estimates)



SOURCE: Board of Governors of the Federal Reserve System.

thereby increasing the demand for the existing supply of goods and services.

Over the years there have been wide fluctuations in the volume of consumer credit outstanding as shown in Figure 22. These wide fluctuations have reflected primarily changes in installment credit, which, in turn, have been correlated with changes in purchases of consumer durable goods. In general terms, when incomes rise on the upswing of business activity, demand for and extension of installment credit increase so that expenditures of households increase more rapidly than their income. When incomes shrink in the downswing of business activity, demand for and extension of installment credit decreases and installment credit outstanding shrinks. In pay-

ing off their outstanding debts, households are not able to use all their current income for expenditures on goods and services so that consumer expenditures decline relative to income.

Thus, fluctuations in installment credit, like almost all other forms of credit, tend to accentuate cyclical swings in consumer expenditures, hence in economic activity. If consumer installment credit, like other forms of credit, tends to destabilize economic activity, one may wonder why the traditional tools of quantitative control are not employed to control the volume of such credit outstanding.

Consumer installment credit institutions are retailers of funds and are one step removed from the money market. The cost of open-market funds is a very small part of the total costs of these institutions. Thus, changes in interest rates of the order of magnitude that has been experienced as a result of the application of quantitative credit controls over the past thirty years have little effect upon the demand for installment credit by consumers. If the volume of consumer installment credit is to be altered materially, it must be accomplished through the installment credit field directly and not through changes in interest rates.

Changes in the level of finance charges are not likely to exert a significant effect on the demand for consumer durable goods nor on the demand for installment sales credit. It appears likely, however, that changes in the down payment required under installment contracts and changes in the length of the period over which repayments must be made exert a significant effect on the demand for consumer installment credit. If the down payment required on the purchase of a \$2,000 automobile is increased from 20 to 40 percent and the term of the contract calls for repayment in 10 months instead of 20 months, some potential purchasers will be eliminated. Consumers will have to provide \$800 down instead of \$400, and monthly payments will increase from \$80 to \$120.

Control over consumer credit was administered by the Board through its Regulation W, which attempted to restrain consumer borrowing from banks and nonbanks also. The basic requirements of the regulation were those which applied to installment sales credit.⁹ Thus, Regulation W prescribed minimum down payments in varying percentages (such as one third) of the purchase price for "listed" durable goods that consumers commonly buy with borrowed funds. It also prescribed maximum maturities such as 12, 15, or 18

⁹ During, and shortly after World War II charge-account credit and single-payment loans to consumer were also controlled under the terms of Regulation W. In 1948 and again in 1950 the revised Regulation W made no provision for control over these areas of consumer credit.

months for the loan contracts. The regulation was flexible; down payments and maturity requirements applied to all listed articles. Whole classes of goods were brought under the regulation when their prices appeared to reflect inflationary development; contrariwise, many articles were removed from the regulation when the Board felt supply had caught up with demand at relatively stable prices.

Down-payment and maturity controls applied to vendors such as automobile dealers who create installment sale-paper as well as to financial institutions; if the installment sale-paper did not comply with the requirements of Regulation W, lenders were forbidden to create it, to buy it, or to accept it as collateral for loans. Makers of installment loans directly to the consumer for the stated purpose of purchasing a "listed" article were subject to the same requirements. Other installment loans (not for the stated purpose of purchasing a listed article) were not limited as to down payment but could not have a longer maturity than that specified in the regulation.

It is not possible to estimate the effect of consumer credit regulation in reducing the demand for loan funds and the expenditure of funds for current output—mainly, durable goods. During World War II the lack of availability of durable consumer goods was a more important factor than consumer credit regulation in accounting for the decline in consumer credit outstanding.

Since buyers of automobiles, household appliances, furniture, and other durable consumer goods commonly resort to installment credit¹⁰ to finance the purchases of these goods, installment credit controls affect a broad segment of the population. Thus, installment credit controls strike at one source of inflation in expenditures, prices, and incomes by restricting demand in two ways. First, the stiffer terms tend to reduce installment purchases of articles covered, thus bringing about a direct and immediate decline in the demand for these articles. If the restrictions are made severe enough so that further installment credit is not available, the demand for durable consumer goods would be sharply reduced. For several months, at least, repayment of outstanding consumer credit would absorb consumer income which could not flow into the nondurable goods market. Second, if the increase in outstanding consumer credit is checked, increases in the stock of money (which can be used to purchase all goods) are limited. To the extent that controls are severe enough to reduce outstanding consumer credit, the total monetary

¹⁰ *Federal Reserve Bulletin* (November 1950), pp. 1432-33.

stock is reduced, thereby reducing consumer demand for both durable and nondurable goods.

A number of criticisms have been leveled at consumer credit controls. They pose a severe administrative problem. During World War II over 200,000 lenders, including financial institutions and retailer or dealer outlets, had to be licensed and regulated. Unlike quantitative credit controls which merely alter the total stock of money, consumer credit controls discriminate between classes of goods and interfere with the work of relative consumer preferences in shifting resources from one area of economic activity to others.

As was pointed out above, consumer installment credit, like any other kind of credit, tends to accentuate economic fluctuations. But since this characteristic is not peculiar to installment credit alone, it cannot be taken as a sufficient reason for controlling such credit. If it were found that installment credit plays an important role in business fluctuations, a defense of these controls might be justified. But the fact is that the few attempts that have been made at a quantitative appraisal of its role do not suggest that the contribution of installment sales credit to cyclical fluctuations is an important one. Many authorities who agree that the Reserve System should not be given permanent power to control consumer installment credit as an anticyclical weapon, nevertheless, agree that it is a useful weapon to combat strong inflationary pressures. At best, however, it can supplement general quantitative tools to control the stock of money.

REAL ESTATE CREDIT CONTROL

The newest selective credit control device to be used by the Reserve System was regulation of credit granted to finance new real estate construction. Temporary authority for the selective regulation of new real estate construction credit was granted to the President under the Defense Production Act of 1950. The authority exercised by the Board of Governors was delegated to it by the President with the proviso that the Board should obtain concurrence of the Housing and Home Finance Agency before any regulation is issued pertaining to residential real estate construction credit. The authority of the Board is limited to loans granted by private financial institutions without guarantees or insurance provided by federal agencies.

Under authority granted to it, the Board exercised control over real estate credit by issuing Regulation X in October 1950. At first the provisions of Regulation X applied to credit terms extended in connection with one- and two-family residential properties. In Janu-

ary 1951 the regulation was broadened to include all newly constructed residential property, and in February it was further extended to certain types of commercial properties. In the revised Defense Production Act of 1952 Congress decreed that down-payment requirements in excess of 5 percent were not permissible if the seasonally adjusted annual rate of new residential housing starts was below 1.2 million units. In effect, if construction starts are below this number, Regulation X is not operative. In June 1952 there was an easing of the restrictions of Regulation X and in September it was suspended.

Regulation X put lending for purchases of new residential and commercial construction under much the same form of control as that which is used to regulate consumer installment credit. Thus, maximum loan values (minimum down payments), maximum maturities, and minimum amortization terms were prescribed for credit extended in connection with new residential construction and most new commercial construction.

The outbreak of hostilities in Korea came at a time when economic activity had attained high levels and prices were increasing moderately. New construction was in record volume, reflecting primarily the exceptionally high rate of residential building. An important factor in the demand for housing was the large volume of funds available on extremely easy terms for residential mortgages from banks and other lenders.

The growing demands of consumers and businesses were adding to the existing inflationary pressure by competing with the government for the labor and materials needed for national defense. In this situation expansion in real estate credit financed by bank borrowing resulted in increases in the stock of money; with the newly acquired funds consumers increased their demand for the labor and materials that went into housing. The process of expanding demand did not stop here. The increased prices and income earned in the building industry gave rise to further increases in demand for all goods.

In the face of increased demand for real estate credit, nonbank lenders sold large quantities of their holdings of government securities to augment their cash in order to extend loans against real estate. Since the Reserve System was supporting the government bond market, most of these securities came into the hands of the Reserve banks (open-market purchases), thereby adding to the lending power of the banking system. Apart from adding to bank reserves, sale of government securities by nonbank lenders directly added to the monetary stock.

In order to provide quickly the substantial volume of materials

needed for national defense, restrictions on real estate credit would serve to decrease the demand for construction materials and labor and thus conserve these resources for defense needs. Moreover, curtailment of real estate credit would dampen the increases in the monetary stock and serve to restrain the rise in prices and income in the building industry. Thus, real estate credit controls by requiring larger down payments and shorter maturities on loans to finance new construction can reduce the demand for this type of credit. The extent to which demand for real estate credit can be reduced and, therefore, the extent to which a rise in prices and income in the building industry can be curbed depends on the severity of the controls imposed.

In discussing margin requirements and consumer installment credit, it was pointed out that the traditional quantitative credit control measures which decrease bank reserves and increase interest rates have little effect upon the demand for such credit. This same argument does not apply to mortgage borrowing for house purchases. Such borrowing is typically long-term and on an installment repayment basis. Thus, an increase in interest rates induced by traditional credit control measures will add to the monthly mortgage payment and will tend to improve the attractiveness of renting rather than buying. A rise in interest rates will reduce spending for new houses by discouraging some buyers altogether and inducing others to buy cheaper houses.

Since the Reserve System continued to support the bond market throughout 1950, it was not able to bring about a rise in interest rates which would have reduced the demand for new housing. Selective control over real estate credit was, therefore, a useful tool in combating the post-Korea inflation. It is impossible to evaluate the role which Regulation X performed in reducing the inflationary pressures in construction and real estate markets. It will be recalled that beginning in the spring of 1951 the Reserve System ceased supporting government bonds at par. This action reduced the willingness of banks to make real estate loans; similarly, nonbank lenders were less willing than formerly to obtain funds for mortgage lending by selling their government securities.

QUESTIONS AND PROBLEMS

1. a. Distinguish between paper eligible and paper acceptable for rediscount. Do the Federal Reserve authorities have more flexibility in respect to the one than to the other? Do you regard each as a good means of controlling the volume of rediscounting? Why or why not?

- b. Explain why rediscounting was important before the early 1930's and has been relatively unimportant since.
2. "Rediscount rate policy was not an effective tool of monetary control."
 - a. Explain, illustrating both in connection with expansion and contraction desired by the central bank. Is discount rate policy more effective in restraining than in stimulating expansion?
 - b. What is the significance of discount rate policy?
 - c. Can rate policy be reinforced by open-market operations? How?
3.
 - a. Does the small volume of industrial loans by Federal Reserve banks outstanding at the close of 1951 (see Table 34, page 315) accurately indicate their relative importance?
 - b. Are such loans regarded as a regular central banking activity?
 - c. Compare the effect on the money stock of an industrial advance by a Federal Reserve bank and of a purchase by it of a United States Government obligation from a dealer.
4. Contrast traditional open-market operations with rediscounting as to:
 - a. Character of obligations that can be acquired by the Reserve bank.
 - b. Initiative of the Federal Reserve authorities.
 - c. Effect on the money stock.
 - d. Control by the Board of Governors.
5.
 - a. What is the effect on Federal Reserve credit control powers of the policy of granting the initiative in open-market purchases to the seller?
 - b. Contrast the reasons underlying Federal Reserve policy with reference to open-market operations in bankers' acceptances in the earlier years of the System and in United States Government obligations during World War II.
6.
 - a. Contrast the effect on the potential money stock of an increase in legal reserve requirements with that of increases in the rediscount rate and open-market sales.
 - b. Why is the flexible reserve requirement characterized as "blunt"?
 - c. What improvement would the ceiling or incremental reserve plan afford? The supplementary reserve plan for increases in loan assets?
 - d. Would the velocity reserve plan described in Chapter 13 be an improvement?
7. "This is not to say that selective credit controls, such as Regulations W and X, are good in themselves. They are, after all, a form of direct control, telling the citizen and the businessman how much he must pay down, and how rapidly he must amortize the balance. Nearly everyone agrees that selective credit controls are obnoxious and greatly inferior to the broad general controls over money and credit exercised through the rediscount rate, bank reserve requirements and effective open-market policy."
 - a. If this be true, why utilize selective controls?
 - b. Why do the terms set in consumer and real estate credit controls include the repayment period as well as the down payment whereas stock market credit controls only cover down payment?

8. "The cost of effective use of monetary measures to stem inflation is a rise in the interest rate on the government debt. . . . The treasury has preferred to hold this one price down even at the cost of facilitating a rise in all other prices. . . . It is long past time that this short-sighted policy was abandoned." This statement was made in 1950. Explain the analysis implicit in the statement. Defend in detail your own position in this policy controversy.

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CHAPTER 15

Monetary and Fiscal Powers of the Treasury

CONTROL over the monetary stock is not an exclusive power exercised by the Federal Reserve authorities. The Treasury has important monetary powers arising from its legislative authority to purchase and sell gold and silver as well as to mint coins and issue certain types of currency. In addition, management of its money balances in the general fund provides the Treasury with an effective instrument of control over the stock of money. The monetary powers of the Treasury like those of the Reserve authorities affect national income and expenditure, particularly in the private sector of the economy, by influencing the size of the monetary stock and through it the amount, availability and cost of funds. Unlike the Reserve System, the Treasury has a variety of fiscal instruments which may affect the level of income and spending by virtue of altering the amount, character, and timing of government expenditures and the amount, type, and timing of taxes collected. The fiscal policies affecting both the government expenditures and government revenue-raising in turn have their repercussions on the expenditures of households and business firms. The methods of public borrowing and the management of the public debt while generally considered an aspect of fiscal policies, nevertheless provide the Treasury with

a substantial amount of influence over monetary developments in the country.

■ MONETARY POWERS

GOLD PURCHASE AND SALE

An addition to the monetary gold stock of the United States unless counteracted by the Treasury or the Federal Reserve System is reflected in additions to the reserves of the member banks and the Reserve banks. The monetary gold stock may be increased by importing gold from abroad or by the sale to the Treasury of newly mined gold, scrap gold, or foreign earmarked gold. Gold physically located in the United States under earmark for a foreign government is not part of the country's monetary gold stock. An increase in earmarked gold which comes from our monetary gold stock has the same effect upon bank reserves as an export of gold. Conversely, a decrease in earmarked gold flowing into our monetary gold stock has the same effect upon bank reserves as an import of gold.

The process by which an increase in our monetary gold stock affects the reserves of the banking system can be illustrated by tracing the various steps resulting from the Treasury's acquisition of \$1 million of gold. (1) The Treasury pays for the gold by drawing a check against its account with the Reserve bank, thus reducing its deposits at the Reserve bank by \$1 million. (2) The seller of the gold deposits the check with a member bank, increasing the latter's deposit liabilities by \$1 million. (3) The member bank deposits the Treasury's check in a Reserve bank, thereby obtaining \$1 million of reserves. (4) The Reserve bank then reduces the Treasury's deposits by \$1 million. In order to replenish its working balance with the Reserve bank, (5) the Treasury may monetize the gold by issuing gold certificates for \$1 million and (6) turn these certificates over to the Reserve bank in return for a deposit with the bank. These transactions are summarized in Table 35.

The books of the Reserve bank show an increase of \$1 million in gold certificates and an increase in deposits owed to the Treasury of \$1 million. Thus, the effects of a \$1 million increase in the monetary gold stock are reflected in a \$1 million increase in member bank deposits and a similar increase in new bank reserves. Assuming the required reserves are 20 percent, the excess reserves of the banking system are increased by \$.8 million.

If the Treasury or the Federal Reserve authorities wish to prevent an addition to the monetary gold stock from affecting the reserves

TABLE 35

EFFECT OF GOLD PURCHASE BY TREASURY
(In millions of dollars)

	Treasury		Reserve bank		Member bank	
	Asset	Liability	Asset	Liability	Asset	Liability
1	Gold +1.0					
2	Deposits at Re- serve bank -1.0					
3					Check against Reserve bank +1.0	Deposits +1.0
4				Due to member bank +1.0	Reserves +1.0	
5				Due to Treasury -1.0		
6		Gold certificates +1.0				
	Deposits at Re- serve bank +1.0		Gold certificates +1.0	Due to Treasury +1.0		
Summary						
Gold	+1.0	Gold certificates +1.0	Gold certificates +1.0	Due to member bank +1.0	Reserves +1.0	Deposits +1.0
					(Excess reserves of \$.8 million)	

of the banking system, four direct courses of action are available to them. The Federal Reserve authorities can move to reduce the excess reserves created in the manner described above by (1) engaging in open-market sales or (2) by raising reserve requirements if they are not yet at their legal maximum. The Treasury can move to counter the increase in bank reserves by (1) increasing the Treasury's balance in the Reserve banks to a higher level than was previously held by transferring funds from commercial banks to the Reserve banks or (2) by sterilizing gold, which means that gold is purchased but gold certificates are not issued, in order to restore Treasury balances with the Reserve bank. In order to restore its balances with the Reserve bank, the Treasury would have to collect more than it spends or it would have to borrow additional funds to build up its balances.

An illustration of gold sterilization is the program instituted by the Treasury in the latter part of 1936. At that time the Treasury undertook to prevent incoming gold from enlarging bank reserves. The procedure was the same as that described above through step (4). Instead of issuing gold certificates to restore its balances with the Reserve bank, the Treasury sold securities in the money market. In depositing the checks received for these securities with the Reserve bank the Treasury's balance was restored, and the Reserve bank debited the reserve account of the member banks on whom the checks were drawn.¹ Thus, the Treasury continued to hold the gold which was added to its monetary stock in an inactive account, and the reserves of the banking system were not increased. Consequently, gold sterilization was tantamount to purchasing gold with interest-bearing securities; the Treasury was engaging in open-market operations (sales). In the recession of 1937 some of the gold was desterilized. This action was accomplished by issuing gold certificates against the gold in the inactive account and increasing Treasury deposits at the Reserve banks. These balances were drawn upon to meet Treasury expenses and to retire maturing debt. Gold desterilization consisted of open-market operations (purchases) by the Treasury.

TREASURY CURRENCY ISSUE AND RETIREMENT

Increases in Treasury currency outstanding add to bank reserves. The two components of Treasury currency are (1)

¹ Actually under this method, the banks' reserves were reduced by \$1 million but their deposits increased by \$1 million so that the banks had a reserve deficiency of \$.2 million (assuming a 20-percent reserve requirement).

silver and (2) paper money and coin. We shall deal with each of these groups in turn.

Silver Policy The Treasury is the custodian of the nation's monetary reserves held in the form of silver. Under the Act of July 31, 1946, the Treasury is required to buy at 90.5 cents per fine ounce all newly mined domestic silver offered to it. The Secretary of the Treasury has the authority to determine when, in what volume, and at what price foreign silver will be purchased. For every ounce of silver held in its vaults, the Treasury has the authority to issue silver certificates equal in face value to \$1.29, the monetary value of an ounce of silver. In practice, the Treasury has issued silver certificates to the extent of the cost of the silver rather than its monetary value.

Purchases of silver by the Treasury increase bank deposits and bank reserves. To illustrate, we shall trace the effects of a Treasury purchase of \$1 million of newly mined silver. (1) The Treasury pays for the silver by drawing a check against its account with the Reserve bank, thus reducing its deposits at the Reserve bank by \$1 million. (2) The seller of the silver deposits the check with a member bank increasing the latter's deposit liabilities by \$1 million. (3) The member bank deposits the Treasury's check in a Reserve bank, thereby obtaining \$1 million of reserves. (4) The Reserve bank then reduces the Treasury's deposits by \$1 million. In order to replenish its working balance with the Reserve bank, (5) the Treasury issues silver certificates in an amount equal to the cost of the silver and (6) turns these certificates over to the Reserve bank in return for a deposit with the bank. These transactions parallel those shown for gold purchases; the effect is depicted in Table 35 if the word "silver" is substituted for the word "gold."

The books of the Reserve bank show an increase in silver certificates of \$1 million and an increase in deposits owed to the members of \$1 million. An increase of \$1 million in our silver stock is reflected in a \$1 million increase in member bank deposits and a similar increase in new bank reserves. Assuming a 20-percent reserve requirement the effect of the silver purchase is an increase of \$.8 million of excess reserves.

The Treasury can boost bank reserves even more than is illustrated in our example. We assumed the Treasury issued silver certificates against the cost of the silver purchased (90.5 cents per fine ounce). Under the law the Treasury can issue certificates against the full monetary value of the silver (\$1.29 per ounce). If this were done, the Treasury's deposits at the Reserve bank would be increased; when it uses these funds to make payments, the reserves of the bank-

ing system would be increased by \$1.29 per ounce rather than by 90.5 cents per ounce.

The difference, roughly, between the total cost of silver purchases and their total monetary value at \$1.29 per ounce represents the amount of silver sterilized by the Treasury. By issuing silver certificates against the "sterilized" silver and depositing these certificates with the Reserve bank, the Treasury could monetize this silver and use the proceeds to meet expenses or to retire debt. As long as the debt retired is not held by the Reserve banks, the effect of these operations would be to increase bank reserves.

Paper Money and Coin The Treasury can influence the stock of money and bank reserves by its issuance of coins and paper money. The process of issuance would be as follows: A new issue of coins and paper currency is deposited by the Treasury with the Reserve banks. Thus, the Treasury's deposit account is increased. As the Treasury utilizes its deposit account to meet its payments, the checks appear in the member banks. The member banks' reserve accounts at the Reserve bank are increased as the checks on the Treasury's account are collected.

As the Treasury retires Federal Reserve bank notes, national bank notes, and Treasury notes of 1890, the immediate effect is merely to give commercial banks deposit credits on the books of the Reserve banks for the currency they surrender. As these three types of currency are shipped to Reserve banks by commercial banks, the Reserve banks debit the Treasury deposit account and ship these issues to the Treasury for destruction. The amounts debited to the Treasury's account on the Reserve banks' books are credited to the reserve accounts of the commercial banks. However, since the Treasury's deposit balances at the Reserve bank are thereby reduced, the Treasury will have to replenish them from increased tax revenues, by withdrawing part of its deposit balances from commercial banks, or by borrowing new funds. The effect of these actions will be to reduce the commercial banks' reserve balances. It should be apparent that bank reserves could likewise be decreased if any other type of Treasury currency outstanding (greenbacks, silver certificates, or coin) was retired by the Treasury.

MANAGEMENT OF THE GENERAL FUND

In the management of the money balances of its own "general fund" the Treasury possesses a powerful instrument of monetary policy. The balances in the general fund represent the money which the Treasury possesses and which is immediately avail-

able for spending. These balances consist of cash held in its own vaults (chiefly inactive gold and sterilized silver as well as small amounts of Treasury currency), demand deposits with the Reserve banks, and its demand deposits with commercial banks. We have already explained the effects of alterations in Treasury cash upon bank reserves and the stock of money.

The manner in which the Treasury handles its deposits in banking institutions is a far more powerful tool of monetary control available to the Treasury than is Treasury cash policy. The flow of cash into the Treasury as tax payments and sales of government securities are executed and the outflow of cash as expenditures are paid for or as debt is retired affords the Treasury an opportunity to exercise some control over the money stock by the manner in which it disposes of its deposits.

When the Treasury deposits with commercial banks checks which are drawn by taxpayers and buyers of federal debt instruments, the reserves and demand deposits of the commercial banks are unaffected. The deposit account of the drawer of the check is reduced while the "tax and loan account" of the Treasury is increased on the books of the commercial banks. When the Treasury deposits the aforementioned checks with the Reserve banks, these banks increase the general account of the Treasury and collect the checks drawn against the commercial banks by debiting the latter's reserve account with the Reserve bank. The effect of such a transaction is to reduce the reserves as well as the volume of demand deposits of the commercial banks. In practice, the Treasury does not use its deposits with commercial banks to effect payments. Instead it draws a check against its commercial bank deposits and transfers the sum to the Reserve banks, which then debit the reserve accounts of the commercial banks.

It should be apparent from this exposition that the Treasury has an important tool of control over the monetary stock at its disposal. Bank reserves can be reduced and demand deposits on the books of the banks can be decreased if the Treasury builds up its balances with the Reserve banks by depositing checks of individuals directly with the Reserve banks and/or drawing down its accounts with commercial banks. Conversely, the Treasury can make bank reserves more plentiful if it increases its deposits in commercial banks and/or decreases its balances with the Reserve banks.

The main objective of Treasury deposit policy is to smooth out the effects of seasonal or other fluctuations in Treasury cash receipts and disbursements in order to minimize the effects of Treasury

operations on the operations of the banking system. Treasury cash policy is designed to minimize interference with bank reserves and Federal Reserve operations in the following ways: (1) The major concentration of tax receipts is deposited in commercial banks, thereby minimizing the banking system's loss of reserves through tax collections. The Treasury transfers balances from the commercial banks to its deposit accounts at Reserve banks in an amount sufficient to meet its current expenditures. In this way the loss of reserves and deposits by the commercial banks is quickly recouped as the recipients of Treasury checks deposit them with commercial banks. (2) The Treasury permits deposit balances with the Reserve banks to fall to a minimum prior to tax collection dates in order to build up reserves of the commercial banks so as to provide for the loss in reserves anticipated when tax collections come due. (3) On occasion the Treasury sells short-term securities directly to the Reserve banks in anticipation of tax receipts so that the Treasury can minimize the amount of tax collections which are withdrawn from commercial banks to build up the general fund with the Reserve banks.

Occasionally Treasury deposit policy is deliberately utilized to alter the reserve position of the banking system. For example, if the Treasury desires to build up the reserves of the banking system, it reduces its deposits with the Reserve banks in meeting its current expenditures, and these funds flow to the commercial banks whose reserves are increased. Conversely, if the Treasury wishes to reduce bank reserves, it withdraws more of its deposits with commercial banks than it currently expends and thus builds up its accounts at the Reserve banks. The effect of this transaction is a reduction in commercial bank reserve balances. An illustration of each of these transactions is afforded by the sequence of events in 1948 and 1949. In cooperation with the Reserve System the Treasury built up its Reserve bank balances in 1948. The intent of this measure was to reduce bank reserves and restrain inflationary pressure then existing. In the recession of 1949 the Treasury reduced its Reserve bank balances in order to pump reserves into the banking system in an attempt to create conditions of monetary ease.

■ FISCAL POLICY

Fiscal policy refers to governmental policy with respect to spending and taxation. It includes the management of the public debt. The size of the budget surplus or deficit is the ultimate

responsibility of Congress. Its decisions with regard to expenditures and taxes determine the size of the surplus or deficit, if any. The Treasury serves as adviser to both the President and the Congress in connection with expenditure and revenue policy. While the Treasury can merely offer advice with regard to Congressional action on appropriations and taxes, it does have important discretionary powers in handling the financing of a deficit or disposing of a surplus. Moreover, the Treasury's management of the outstanding debt affords it a powerful weapon for altering economic activity.

Half a century ago when the federal budget amounted to less than \$500 million, it was not a very important influence on the level of economic activity. The situation has changed markedly since that time. As is evident in Figure 23, the annual budget has grown to over \$60 billion with little likelihood of any overwhelming reduction in this figure; in fiscal 1952 the budget amounted to roughly 20 percent of the GNP (Gross National Product). Government expenditure and revenue programs now constitute one of the important determinants of the level of income and employment. Depending on the nature of these government policies, both may contribute to stability or instability in economic activity.

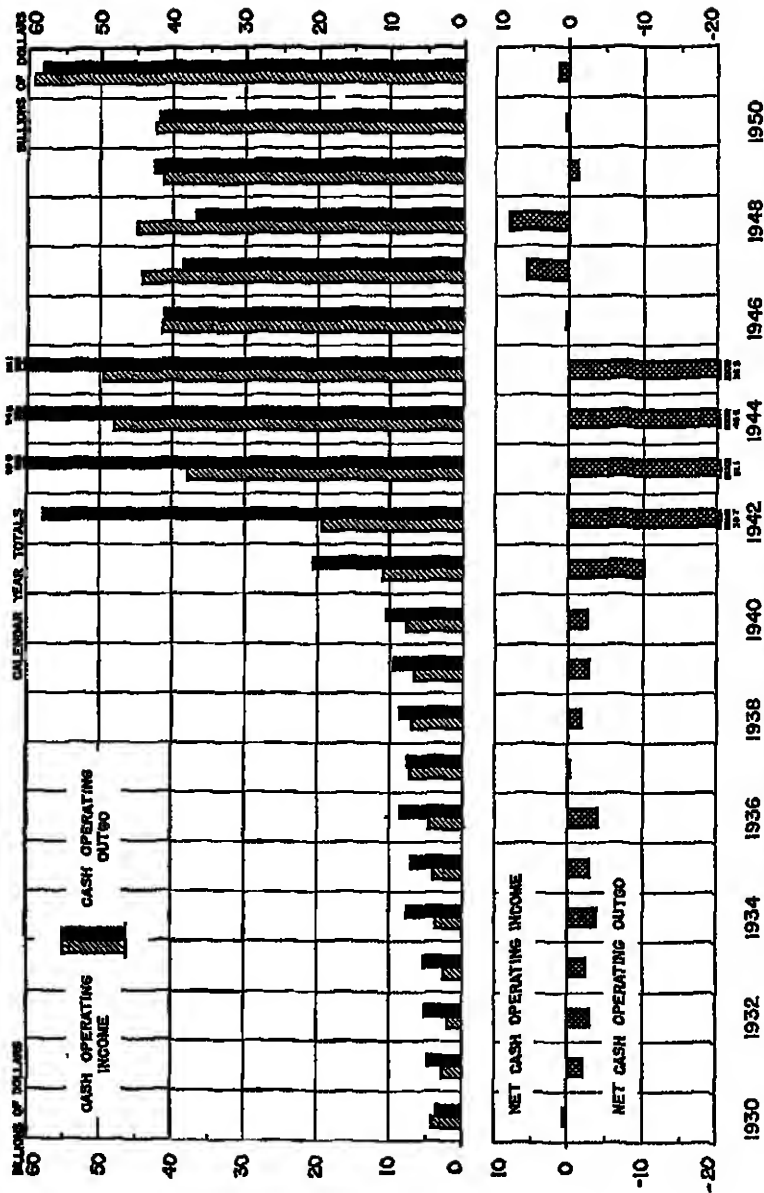
THE ADMINISTRATIVE AND THE CASH BUDGET

Before proceeding to discuss the economic aspects of government revenue and expenditure policy, it is desirable to distinguish between the administrative budget and the cash budget. The administrative budget records the income earned and the expenses incurred in the general operations of the government whether cash payments to or from the public are involved or not. A simple illustration may serve to clarify the differences in recording procedure in these two budgets. When armed forces leave bonds were issued to servicemen, these bonds were recorded as an expenditure in the administrative budget whereas they did not appear in the cash budget. In subsequent periods as these bonds were cashed in by servicemen, they were recorded as expenditures in the cash budget but did not appear at all in the administrative budget.

In the fiscal year ended June 30, 1952, the administrative budget showed a deficit of \$4 billion. For this same period the cash budget showed a surplus of \$.1 billion. The chief discrepancy between these two budgets is the result of the operations of the various social security trust accounts administered by the government. While these funds are being built up, they show an excess of receipts over cash

FIGURE 23

CASH INCOME AND OUTGO OF THE UNITED STATES TREASURY



Note: Treasury data and Federal Reserve estimates. Source: Board of Governors of the Federal Reserve System.

expenditures. This cash surplus is not included in the administrative budget but is recorded in the cash budget.²

More and more, economists concerned with the relation of government spending to general economic activity have dealt mainly with the cash budget. This budget records the actual movement of cash between the Treasury and the private sector of the economy; hence, it is a more useful tool for interpreting the effect of government fiscal operations upon the demand for goods and services in the market. Therefore, our discussion of fiscal policy will apply to the cash budget.

ECONOMIC ASPECTS OF THE GOVERNMENT BUDGET

The government affects spending, employment, and prices through both the revenue and expenditure sides of its budget. Its purchases of goods and services add directly to the demand for current output, thereby creating income for individuals and business firms. Government expenditures to its employees, for interest, veterans', and social security benefits, and for various other transfer payments add to disposable income and spending power. Taken by themselves, government expenditures tend to expand money incomes and the market for business output.

On the other side of the budget, tax collections reduce personal and business incomes that might have been used for consumption or capital formation. Thus, taken by itself, taxation tends to shrink money income and the demand for output.

The observations about the effects of the government budget pertain not only to the national government but also to state and local budgets.³ However, state and local budgets do not have the flexibility required for an effective stabilization program. In addition, the national government's budget is quantitatively more important than all the state and local government budgets combined. It should be readily apparent, however, that if fiscal policy is to achieve its maximum effectiveness, tax and spending policies of all levels of government should be integrated. To simplify the exposition in the discussion that follows, we shall concentrate on the economic effects of fiscal policy on the national government level.

Government expenditures and receipts can be combined in vari-

² For a helpful description of the difference between the administrative and cash budgets of the federal government see Committee for Economic Development, *Tax and Expenditure Policy for 1950*, Appendix B; also *Treasury Bulletin* (September 1952), pp. 12-13.

³ See A. H. Hansen and H. S. Perloff, *State and Local Finance in the National Economy* (New York, 1944).

ous ways to achieve a stimulating or deflationary effect upon aggregate demand and economic activity. In general, a surplus tends to deflate national income for at least two reasons: (1) The tax leakage from the income stream exceeds the flow of government funds into the income stream, and (2) a surplus is usually employed to retire outstanding government debt. Conversely, a deficit tends to expand national income because (1) the flow of government funds into the income stream exceeds the sum of tax leakages from that stream and (2) a deficit is usually financed by the creation of new money.

The preceding generalizations are somewhat misleading because they imply that a balanced budget has no effect upon national income. It is not only the size of the revenue or the expenditures that is important, but also the composition of these items must be considered in appraising the effects of the government's fiscal policy upon economic activity. A given amount of revenue can be raised in many different ways, and government expenditures can be made for a variety of purposes. For example, a tax on corporate profits and a tax on personal income may both produce the same amount of revenue, but the former may reduce private consumption less and private investment more than the latter does. An expenditure of \$1 million on roads is not likely to cause an offsetting decline in private investment, whereas the same amount spent on a power project may cause an offsetting decline in private investment.

A balanced budget need not be neutral in its effect upon national income. If an increase in personal income taxes is borne by taxpayers who planned to accumulate idle cash balances while the government's expenditures are used to pay wages, etc., to employees who have a high marginal propensity to consume, the effect will be to increase the consumption function for the whole population. Even though the budget is balanced, the effect of the above transaction would be to speed up the velocity of money and result in an increase in national income.

It would be possible to influence the level of national income by varying the size of the budget but always keeping both sides equal. However, the important stabilizing effects of fiscal policy result from the size of the surplus or deficit in the budget. Therefore, the principal effectiveness of fiscal policy lies in the ability of the government to vary the differences between expenditures and receipts rather than to depend upon a balanced budget and variations in its absolute size.

ANTICYCLICAL FISCAL POLICY

By spending in excess of its current revenues the government can exert an expansive influence upon employment, income, and economic activity. Conversely, by collecting more than it spends the government can exert a contractive influence upon economic activity. Whether the government's fiscal policy can be used to contribute to stability of economic activity depends upon its timing and magnitude. Deficit financing in a time of high levels of employment and income tends to induce or aggravate inflation. The same policy in a time of recession can avert serious deflation and may serve to stimulate a recovery. Pursuit of a budgetary surplus in a depression will aggravate the fall in demand for current output, but the same policy in a period of inflation will promote economic stability.

If the government's fiscal policy is to avoid aggravating instability and if it is to make a positive contribution to promoting stability, then the practice of annual budget balance despite fluctuations in employment and income must be abandoned. Adherence to a budget balanced in good years as well as bad would tend to aggravate economic instability.

Under our present system of taxes the aggregate revenue of the government is highly responsive to changes in the level of national income. Yields on the corporate and personal income taxes fluctuate more sharply than changes in income. Thus, a 10-percent rise in income will yield more than a 10-percent increase in tax take by the government. To a lesser extent social security taxes as well as excise taxes on tobacco, alcoholic beverages, and many other products are responsive to changes in income. With a given structure of tax rates, increases or decreases in national income automatically produce increases or decreases in total federal revenues. In the face of this phenomenon the application of an annually balanced budget would necessitate lowering taxes and/or increasing expenditures in times of prosperity and raising taxes and/or lowering expenditures in times of depression.

If budget balance was achieved annually, during a period of prosperity taxes would have to be reduced. This would increase disposable income, hence spending by business and individuals would be encouraged. This, in turn, would lead to further rises in prices, income, and employment. In short, an inflationary situation would become more inflationary. If taxes were not reduced in prosperity, then government expenditures would have to be increased if the principle of budget balance was followed. An increase in gov-

ernment expenditures during periods of high and rising levels of income would merely add to the inflationary pressure. When federal revenues declined in response to a deflationary decline in national income, the principle of an annually balanced budget would require either an increase in tax rates or a decline in government expenditures, or both. Increases in tax rates would reduce disposable income and would result in further curtailment of spending by individuals and business. Reductions in government expenditures would reduce the demand for current output even further with a resulting decline in income. In summary, an annual balance in the government budget would at one time add fuel to the inflationary fire and at another time would cause a decline in economic activity to move cumulatively downward.

At this juncture most economists would recommend that government fiscal policy should be designed to stabilize economic activity. This clearly means the abandonment of the annually balanced budget. In its place would be a flexible budget policy designed to achieve a surplus during boom periods and a deficit during periods of low and declining activity.

GUIDES TO FISCAL POLICY

There are several ways of planning the desired flexibility in the relation between government revenue and expenditure. Basically these techniques are (1) automatic flexibility, (2) formula flexibility, or (3) discretionary action.

Automatic Flexibility A fiscal policy designed to stabilize economic activity which is completely automatic in operation has much to be said for it. There is no need to forecast economic activity; automatic stabilizers would operate promptly. There are no delays pending passage of new appropriations or tax laws.

Our present fiscal system has large elements of automatic stabilizers built into it. With our heavy reliance upon personal and corporate income taxes, revenues are very sensitive to changes in income with no changes in tax rates. Revenues rise more than income does, and they fall more rapidly than income. On the expenditure side, insurance payments to the unemployed, agricultural subsidies, and relief payments increase when national income and prices decline. Thus, without any need for discretionary action by either Congress or the executive, government expenditures rise relative to revenue during a business downswing and fall relative to tax receipts during a rise in economic activity. To this extent, automatic stabilizers have been built into the national budget.

Formula Flexibility Most economists favor the greatest possible use of automatic flexibility in the budget. Since automatic stabilizers as presently constituted are not likely to provide sufficient contra-cyclical budget policy, many groups favor enactment of legislation by Congress of rules regarding alterations of tax rates and revision of spending programs which come into force if some index or indexes of economic activity show declines or rises beyond a certain point.

Discretionary Action Some experts would prefer to grant the executive branch of the government the power to alter tax rates and spending programs without setting specific rules or guides. While the advantage of this device is that it provides far greater freedom of action for compensatory budget policy, there is the real danger of vesting too much power in the executive's hands.

Whatever the administrative and political problems may be, it is clear that greater flexibility in the budget than is now provided by the existing automatic stabilizers is desirable. Whether these can be obtained is not now known. In any case, monetary policy is a far more flexible instrument than budget policy. It can be utilized to supplement budget policy in a frontal attack on the problem of economic stability.

■ DEBT MANAGEMENT

The fiscal policies of the government are determined in the final analysis by Congress in authorizing appropriations and legislating taxes. While the size of the cash surplus or deficit is a result of Congressional action, the Treasury has some discretionary authority over the way it handles the deficit or surplus. The Treasury must finance a deficit somehow. It can do this in two ways: it may draw on the general fund, or it may add to the gross debt. Conversely, a cash surplus yields funds that can be used to replenish the general fund or can be used to reduce the gross debt. A reduction in the general fund held in cash or with the Reserve banks increases the reserves of the banking system ⁴ and increases the public's money balances. An increase in the general fund held in cash or with the Reserve banks decreases bank reserves ⁵ and decreases the public's money balances.

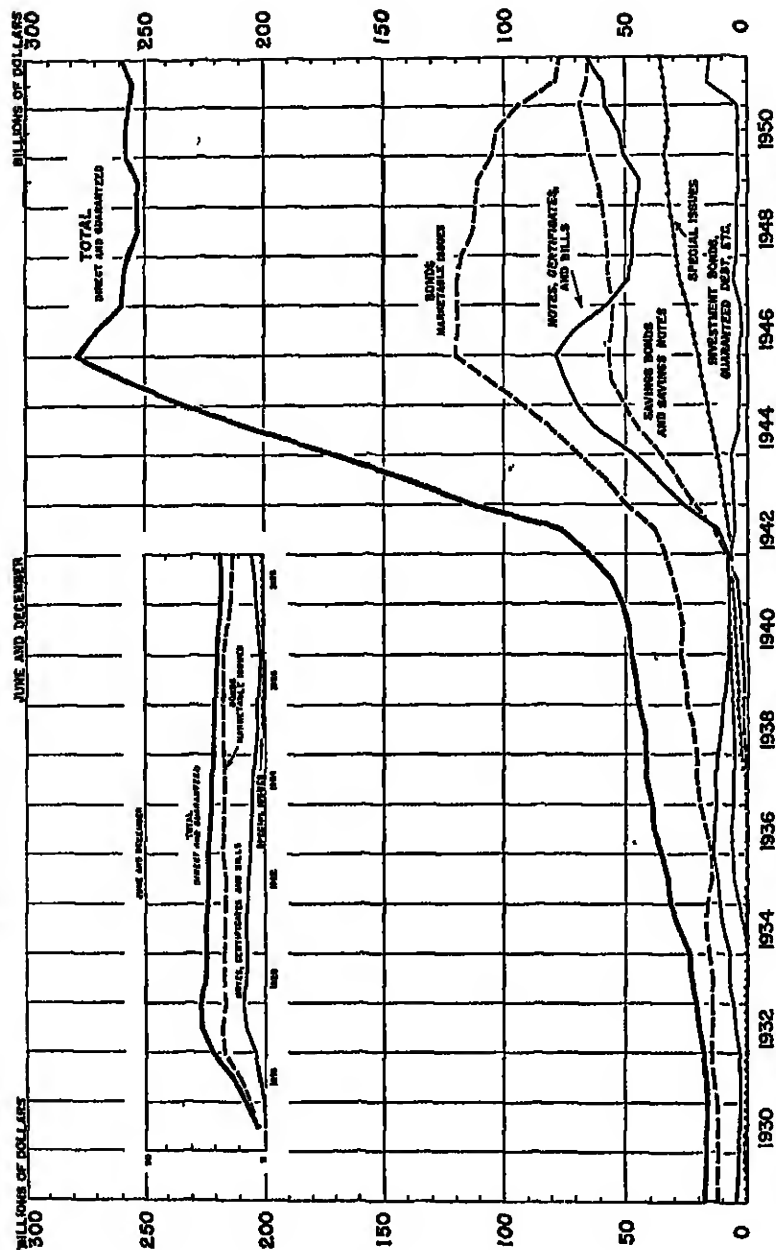
If we assume the Treasury cash surplus or deficit affects only the gross public debt outstanding and does not result in any changes

⁴ If the Treasury's balances with commercial banks are reduced, bank reserves are unaffected.

⁵ If the Treasury's balances with commercial banks are increased, bank reserves are unaffected.

FIGURE 24

GROSS DEBT OF THE UNITED STATES GOVERNMENT

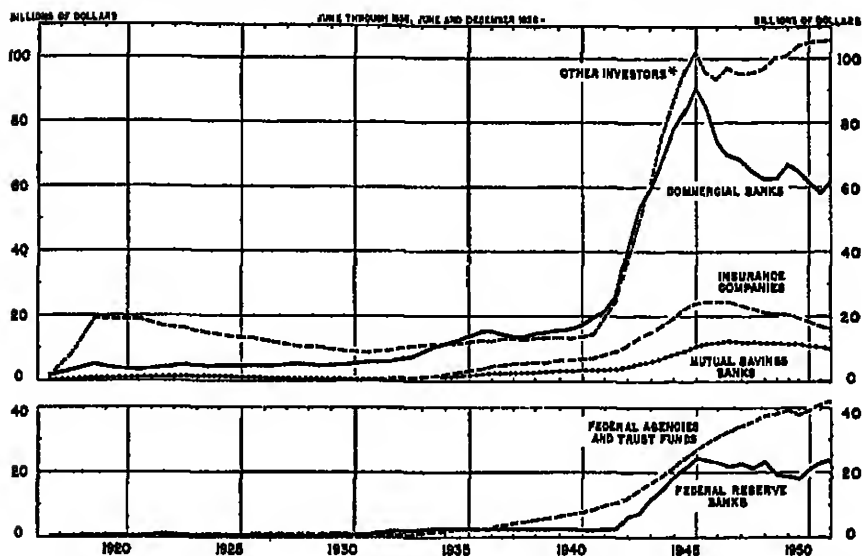


Note: Data obtained from the Treasury Department. Source: Board of Governors of the Federal Reserve System.

in the general fund, the size of the national debt is merely the result of legislative action relative to expenditures and revenue. Nevertheless the Treasury can wield a good deal of influence over private spending, saving, and investment by the manner in which this debt is managed—regardless of the size of the debt.

FIGURE 25

OWNERSHIP OF UNITED STATES GOVERNMENT SECURITIES
(Treasury Department and Federal Reserve estimates)



* Individuals, nonfinancial corporations, state and local governments, and miscellaneous investors.

SOURCE: Board of Governors of the Federal Reserve System.

In connection with financing a budgetary deficit the Treasury has discretionary authority over: (1) the source of borrowing, (2) the maturity of the indebtedness, (3) the rate of interest to be paid, and (4) the price policy to be permitted for the debt instruments. Figures 24 and 25 present the composition since 1929 and the ownership since 1919 of the United States Government debt.

Before going on to discuss the economic implications of each of these problems, it is worth-while calling attention to the increasing importance of the public debt as an element of the economy over the last 25 years. In 1952 the public debt amounted to over \$250 billion and accounted for about one half of the total public and

private debt. Changes in the holdings of the public debt, its maturity distribution, and its interest charges might have far-reaching effects on the economy. In view of its repercussions on economic activity, it is essential that the management of the public debt is directed not merely to the financial requirements of the government but much more important to the effects of such management upon the entire economy.

THE SOURCE OF BORROWING

When the Treasury borrows funds, it may sell government obligations to individuals (including nonfinancial corporations and financial institutions other than banks), to commercial banks, and to the Reserve banks.

Sales to individuals. When the Treasury sells its obligations to individuals (as defined above), the latter pay for the debt instruments by drawing checks on their deposit accounts and turning them over to the Treasury. The latter redeposits them with commercial banks. This transaction simply reduces private deposits with commercial banks and increases government deposits with these institutions. When the Treasury shifts these deposits to its account with the Reserve bank, the commercial bank's reserves are reduced. However, as the Treasury draws upon its accounts at the Reserve bank to meet its payments, the recipients of government checks deposit these with their bank. The result of this set of transactions is to restore bank reserves and demand deposits of individuals in commercial banks. Thus, reserves and deposits of commercial banks are not affected permanently.

Sales to commercial banks. When the Treasury borrows by selling its securities to the commercial banks, an expansion of demand deposits occurs. Thus, the bank writes up deposits in favor of the Treasury. Since the deposit liabilities of the banks increase, the legal reserve requirements of the banks are increased; this action reduces the banks' excess reserves. When the Treasury shifts its deposits to the Reserve banks, the commercial banks' reserves at the Reserve banks are reduced. As the Treasury makes payments, the recipients of the checks deposit them with commercial banks whose reserves are then restored. The result of this set of transactions is to increase the total deposits on the books of the banks and to reduce excess reserves of the banking system. The government debt is monetized, and the resulting deposits tend to remain on the books of the banks until the securities are redeemed or until they are sold outside the commercial banking system.

Sales to the Reserve banks. When the Treasury sells securities directly to the Reserve banks, its deposits with the latter increase. As these deposits are drawn down, the recipients deposit the Treasury checks in their banks. The latter send the checks to the Reserve banks who credit the banks' reserve account. The result of this set of operations is to increase the demand deposits as well as the reserves of the commercial banks. These commercial bank deposits are likely to remain in existence as long as the Reserve banks continue to hold the government debt.

Government Debt Retirement If the government accumulates a cash surplus (collects more than it spends) as a result of its current operations, the public writes checks against its accounts in payment of the tax bill. The Treasury deposits these checks in its account at the Reserve banks. The latter debit the reserves of the commercial banks and increase Treasury deposits with the Reserve banks. Thus, a cash surplus of the Treasury reduces the public's demand deposits and reduces the banks' reserves. However, if the Treasury uses its cash surplus to retire government debt instead of merely building up the general fund, the effects of this surplus will depend upon the ownership of the securities at the time they are retired.

We have seen that building up a Treasury cash surplus reduces demand deposits and bank reserves. If this surplus is used to retire debt held by individuals (as defined above), these groups receive a check on the Reserve bank which they deposit with the commercial bank; thus, private demand deposits increase. When the commercial bank sends the check to the Reserve bank for collection, the reserves of the commercial bank are increased. Thus the anti-inflationary effects of the cash surplus are eliminated. If the Treasury uses its cash surplus to retire debt held by the commercial banks, the reserves of the commercial banks are increased although the deposits, reduced by payment of taxes, are not restored.^o If the cash surplus is used to retire debt held by the Reserve banks the fullest measure of anti-inflationary pressure resulting from a cash surplus is achieved. If the Treasury retires Reserve bank-held debt the government securities held by the Reserve bank are redeemed and the Treasury's deposit at the bank is correspondingly reduced. The reduction in primary reserves and demand deposits of the commercial banks occasioned by the payment of taxes is permanent.

Refunding of Government Debt Even if the Treasury is not able to acquire a cash surplus, debt management may be utilized as an anti-inflationary tool. If the Treasury sells new securities and uses

^o Actually the banks' excess reserves are increased since they no longer have as large a volume of deposits while their old quantity of reserves is restored.

may affect economic activity. The pattern of interest rates on long- and short-term debt was frozen at the time of Pearl Harbor. The rate structure was relatively low, and during the war stability of rates was maintained. This rate pattern was established for a variety of reasons. First, it would make carrying charges on the debt low. Second, the Treasury did not believe that a rise in interest rates during the war would enable it to sell a larger share of the debt to the nonbank public. Finally, the Treasury did not believe that a higher interest rate would encourage the nonbank public to hold its debt for longer periods.

Since the end of the war the pattern of rates has been adjusted; both long- and short-term rates have been allowed to rise. Short-term rates were permitted to rise in an attempt to encourage banks to hold their short-term obligations rather than sell them to the Reserve banks and augment their reserves. The increase in short-term rates was also designed to encourage the nonbank public to hold on to their short-term obligations rather than to sell them to the banks. Long-term rates were unfrozen in the spring of 1951 in order to encourage banks to hold on to their long-term obligations as well as to discourage institutional investors from unloading their government debt. Thus, the rise in long-term rates was designed to put an end to monetization of the debt. In the main we have no precise data on the effect of interest rates upon the use which the public makes of its money balances. Nevertheless, interest rates have been permitted to rise in an attempt to encourage nonbank holders to acquire government debt. How effective this instrument is cannot be expressed in quantitative terms.

THE PRICE POLICY PERMITTED FOR THE DEBT

As long as a low and stable pattern of rates is maintained, general instruments of monetary control cannot be exercised. At any time there is an approximate equality between the yields fixed by the Treasury on its new offerings and market yields on comparable outstanding Treasury issues. The Treasury will not be able to sell its new issues at yields below current market yields on comparable issues, and it is not likely to offer significantly higher yields on the new issues. As long as the Treasury insists upon maintenance of price stability for outstanding issues, the Federal Reserve authorities make their general credit policies conform to the pattern of rates set by the Treasury. Since the decision to support a pattern of rates involves open-market purchases the Reserve System is not in a position to pursue an anti-inflationary policy. However, if the

Federal Reserve authorities maintain freedom of action in the pursuit of credit policy, then the Treasury's yields on new offerings are established by the general level of interest rates determined by the monetary authorities. During the war and most of the postwar years the prescription of stable government bond prices meant that the Reserve System was impotent to pursue a restrictive monetary policy. This had obvious effects upon economic activity—particularly upon the level of commodity prices, which continued to rise.

■ GOVERNMENT LENDING AGENCIES

The federal government exercises control over the stock, availability, and cost of money through its supervision and examination of banks and the general controls exercised by the Federal Reserve System and the Treasury. In addition, however, the government has a substantial weapon to affect monetary developments by virtue of the control it exercises over the activities of a large number of government corporations and agencies which make loans or insure and guarantee loans made by private financial institutions.

A large number of government corporations and agencies have independent responsibilities for making funds available to private borrowers. Congress has given some of these agencies and corporations the power to make loans while others have been granted powers to insure or guarantee loans made by banks and other financial institutions. A few of these organizations have the power both to make loans and to guarantee or insure loans made by financial institutions. In some cases the loan or loan insurance functions are related to some specific purpose such as aid to agriculture, homeowners, and foreign countries. In other instances the functions performed by these agencies are designed to make credit available on risks and at terms not ordinarily accepted by private lenders.

The specialized banking corporations and credit agencies of the federal government are found in virtually all fields of finance; in several areas these government institutions dominate the field. These agencies play an important role in influencing the supply, availability, and cost of credit to private borrowers. Their outstanding loans or loan guarantees and insurance (domestic and foreign) amounted to over \$38 billion in mid-1951.⁷ The largest fraction of this amount was accounted for by home mortgage loans, most of

⁷ U. S. Congress Joint Committee on the Economic Report, Subcommittee on General Credit Control and Debt Management, *Replies to Questions and other Material*, 82d Cong., 2d Sess. (1952), p. 269. Known as the Patman Hearings.

which had been extended by private lenders under guarantees or insurance of the Federal Housing Administration and the Veterans' Administration. Foreign loans and various types of credit extended to farmers accounted for most of the remainder. Table 36 deals only with the outstanding *loans* of federal lending agencies at the end of 1951.

Of the lending, insuring, and guaranteeing corporations and agencies of the federal government, only one group—that dealing with farm loans—existed before 1932. The great decline in income between 1929 and 1932 impaired the ability of debtors to pay off their debts. Banks and other creditors could not collect from many of the debtors, and the banks in particular were forced to suspend convertibility of demand deposits into cash. Chiefly in the hope of arresting the banking crisis the federal government set up the Reconstruction Finance Corporation early in 1932. This government financial corporation aimed initially to aid the banks directly by making loans to them; indirectly it aided banks by extending loans to railroads, many of whose bonds were threatened with default and were held by financial institutions.

During the worst years of the depression a very large proportion of mortgage debtors were in default. Banks and other financial institutions holding these mortgages tried to protect themselves by foreclosing the mortgages. The result was great hardship to the mortgage debtors (farmers and homeowners) but very little help to financial institutions since the forced sales of property aggravated the declines in prices and income throughout the economy. In 1933 and 1934 the federal government stepped in, taking over ownership of billions of dollars of defaulted mortgages—giving banks and other creditors government bonds in exchange. This action was accomplished through the expanded farm loan agencies and the creation of new agencies to deal with homeowner mortgages.

The direct lending activities of the government corporations and agencies were utilized during the depression of the 1930's to provide funds to borrowers who were unable to obtain these funds from private financial institutions, particularly banks. These lending agencies, besides borrowing from the Treasury, issue securities which are direct obligations of or are guaranteed by the federal government. The securities, in turn, were sold to investors who would not purchase private evidences of debt because of the general pessimism prevailing during the depression. Since banks bought many of the securities which were issued, the result of this procedure was to increase the monetary stock of the country. In a very real sense governmental lending of borrowed funds is one form of deficit

TABLE 36

OUTSTANDING LOANS OF FEDERAL LENDING AGENCIES, DECEMBER 31, 1951
(In millions of dollars)

By type of loan	Dec. 31, 1951	By agency	Dec. 31, 1951
To aid agriculture:		Corporations:	
Agricultural credit corporations	\$ 629.1	Banks for cooperatives	\$ 424.8
Cooperative associations	429.4	Commodity Credit Corporation	782.3
Crop, livestock, and commodity loans	812.8	Export-Import Bank of Washington	2,296.0
Farm mortgage loans	517.1	Federal Farm Mortgage Corporation	34.0
Other ^a	1,773.0	Federal home loan banks	805.9
Total	\$ 4,161.4	Federal intermediate credit banks	633.0
To aid homeowners:		Federal National Mortgage Association	1,849.6
Mortgage loans	2,141.4	Home Owners' Loan Corporation	594.7
Other	3	Public Housing Administration	740.4
Total	2,141.6	Reconstruction Finance Corporation:	9
To aid industry:		Exclusive of assets held for U. S. Treasury	27.7
Railroads	109.7	Assets held for U. S. Treasury	27.7
Other	488.5	Defense Production Act of 1950	2.4
Total	589.1	Tennessee Valley Authority	2.4
To aid states, territories, etc.		Other	
To aid financial institutions:		Total	\$ 8,191.7
Banks	1	Certain other business-type activities:	
Insurance companies	13.4	Farmers' Home Administration	520.9
Mortgage loan companies	800.7	Federal Housing Administration	29.5
Total	814.2	Office of Housing and Home Finance Administration	40.5
Foreign loans:		Public Housing Administration	14.6
Guaranteed loans held by lending agencies	42.9	Rural Electrification Administration	1,742.1
Other	6,067.3	Other ^b	4,055.8
Total	6,110.3	Total	6,403.4
Other loans:			
Miscellaneous mortgage loans	23.7		
Other	42.4		
Total	66.2		
Total loans	<u>\$14,595.1</u>	Total loans	<u>\$14,595.1</u>

NOTE: Total loans do not total exactly due to rounding.
a Principally for rural electrification.

SOURCE: *Treasury Bulletin* (April 1952), p. 66.
b Includes \$3,750 million loan to the United Kingdom.

financing by the government. Deficit financing increased the demand for funds from banks. Insofar as it led to an increase in economic activity, the deficit may have stimulated private demand for loan funds from financial institutions. Moreover by expanding economic activity the government lending may have served to encourage banks to increase the amount of loans they were willing to make to private customers. Another aspect of the government loan program was that it pointed out some loan opportunities which were neglected by private credit institutions.

It is reasonably clear that the intent of the government insurance and guarantee program is not to displace banks as lenders but to increase the over-all volume of bank lending by making private debts more attractive to lenders by virtue of government guarantee or insurance of all or part of the debt. These techniques affect the stock of money by encouraging or discouraging lending by private institutions, particularly commercial banks.

In carrying out their functions the federal lending and guaranteeing corporations and agencies do not have responsibility for the general monetary and credit situation. Their purpose, interests, and activities reflect mandates and powers given by Congress. In view of the magnitude of their operations, these corporations and agencies exert a substantial influence on the level of economic activity. By lending and guaranteeing loans on liberal terms during periods of depression and by following restrictive policies during periods of high employment and rising prices, they can assist monetary and fiscal policies designed to achieve general economic stability. By pursuing liberal lending and guaranteeing policies at all times they may contribute to economic instability and partially defeat appropriate monetary and fiscal policies.

At the present time there are no effective arrangements for co-operation between the Reserve System and the Treasury and these federal lending and guaranteeing agencies and corporations. Thus, general monetary policy in a particular field may be offset by the activities of the government agencies in encouraging or discouraging capital formation in that field. This conflict has been true in several areas—of which by far the most important has been housing—throughout most of the postwar period. It would have been indeed contradictory (and futile) to have endeavored to reduce the volume of new home construction by restrictive monetary policy while at the same time encouraging it by direct aids.

■ RELATION BETWEEN THE CENTRAL BANK AND THE TREASURY

The literature of economics abounds with discussions as to the "proper" status of the monetary authority (the central bank) relative to the fiscal authority (the Treasury). In its narrowest sense the function of the Treasury is the raising of the revenue needed for government operation, while the central bank's function is to promote monetary stability. The battle over the proper relation between the central bank and the Treasury arises from the fear—based upon substantial historical evidence—that if the central bank is subordinate to the Treasury the result will be secular inflation. In many quarters it is believed that left to its own devices the Treasury would resort to the politically expedient device of financing expenditures by credit creation. The presence of a strong "independent" central bank charged with and exercising the responsibility of monetary stability, it is argued, could prevent the Treasury from pursuing a course of action designed to minimize the cost of financing deficits of the government.

The traditional position in the United States has been that the power and responsibility for monetary policy should be lodged in an "independent" Federal Reserve System which is accountable to Congress but should not be responsible to the executive branch of the government. In 1913 when the Federal Reserve Act was debated, many bankers proposed that the Board should be independent of the government and the member banks should select the Board members. President Wilson was able to win his point that the Board should be appointed by the President. It was further provided that the Secretary of the Treasury and the Comptroller of the Currency should be ex-officio members of the Board. In order to assure maintenance of the Board's independence from the executive branch, in 1935 these ex-officio members were dropped, and the Board members were given 14-year terms of office.

The Reserve authorities are charged with responsibility for monetary policy, but the power and responsibility for debt management is delegated by Congress to the Treasury department. It is unrealistic to assert that monetary policy formulation rests with the Board and powers of debt management are lodged with the Treasury. The Board has always exercised an influence on debt management through its general monetary policies and in the war and postwar years at least, monetary management has been an integral part of debt management. While the Treasury has monetary control powers

of its own, it has exercised its greatest influence on monetary policy through its debt management powers.

By virtue of its tremendous size the management of the debt has become one of the major elements affecting economic stability in our country. In view of the ambiguity and overlapping of responsibility for monetary policy and debt management a host of proposals for overhauling our financial machinery have been forthcoming in recent years.

The problem at issue has been clearly stated by the so-called Douglas Report as follows: *

As a practical matter there will be at any time an approximate equality between the yields fixed by the Treasury on its new offerings and the market yields on comparable outstanding Treasury issues, the latter reflecting the general monetary policy being followed by the Federal Reserve. The Treasury will not be able to sell its new issues at yields below the market yields on comparable issues already outstanding, and it is not likely to offer significantly higher yields on the new issues. But who determines the levels at which the yields on the outstanding and new issues will be equalized—the Federal Reserve or the Treasury?

The proposals for altering the division of authority and responsibility for monetary and debt management in the interest of securing more appropriate policies have been legion.

On the one hand, some persons propose that all debt management and monetary powers be lodged in the Treasury. A strong case can be made for this position on the grounds that it would place the responsibility for monetary and fiscal matters squarely in the lap of the Treasury. The great disadvantage of such a proposal lies in the fact that, at least historically, Treasuries have been rather zealous in their pursuit of easy money. The huge debt in this country means that an easy-money policy would make the technical problem of debt management easier. In the final analysis the rightness or wrongness of these positions depends on one's judgments about matters which are not easily verifiable for the future.

At the other extreme are those proposals that would permit the central bank to be separate from the Treasury to provide a point of view which is detached from the Treasury's fiscal responsibilities. By virtue of this independence the central bank could make judgments specifically oriented toward the maintenance of high levels of economic and financial stability. Complete separation which would enable the central bank to negate Treasury operating policies

* U. S. Congress, Joint Committee on the Economic Report, Subcommittee on Monetary, Credit and Fiscal Policies, *Report, 81st Cong., 1st Sess. (1950)*, p. 29.

would probably be intolerable. In effect one possible interpretation of the Douglas subcommittee's report which recommended that Congress require that "Treasury actions relative to money, credit and transactions in the Federal debt shall be made consistent with the policies of the Federal Reserve" is that the Reserve System would dominate the Treasury.

Neither the so-called Douglas subcommittee nor the so-called Patman subcommittee would create a central bank independent of the government.⁹ The meaningful choice of institutional arrangement appears to lie between a consolidation of monetary fiscal and debt management powers in the Treasury and the creation of a Federal Reserve System which is responsible to the legislature and/or the executive but is independent of the Treasury.

As long as a central bank is to be maintained, it is imperative that independence from the Treasury should be assured. Otherwise there is nothing to be gained from a central bank. In fact, this presence of dual organizations where the central bank is dominated by the Treasury invites conflict, indecision, and, in general, a failure to pursue successfully any given policy.

Both the Douglas subcommittee and the Patman subcommittee urge the creation of some sort of national monetary and credit council which would include the Secretary of the Treasury, the Comptroller of the Currency, the Chairman of the FDIC, the Chairman of the Board of Governors of the Federal Reserve System, and the heads of other principal federal agencies that lend and guarantee loans. This body would serve as a consultive organization and would report periodically to Congress.

Such a council could serve a useful purpose in coordinating the diffuse monetary and fiscal policies exercised by the multitude of agencies and organizations now charged with responsibility for executing these powers. The real question of its success depends in the final analysis upon a decision as to whether the Reserve System shall be independent of the Treasury though responsible to the government.

QUESTIONS AND PROBLEMS

1. At the close of 1936 the Treasury announced a policy of sterilizing gold imports.
 - a. Explain the technical means by which the policy was carried out.
 - b. Just what effect did the policy have upon bank reserves?

⁹ See U. S. Congress, Joint Committee on the Economic Report, Subcommittee on General Credit Control and Debt Management, *Report*, 82d Cong., 2d Sess. (1952), p. 4.

2. Trace the effect on bank reserves of:
 - a. Treasury purchase of domestic silver and issue of silver certificates for the cost of the silver.
 - b. Retirement of national bank notes.
3. In connection with European monetary stabilization after World War I a balanced budget was regarded as a basic prerequisite.
 - a. Does this mean that an unbalanced budget can never contribute to economic stability?
 - b. In analyzing the contribution to stability to be made by any particular budget, how important is it to consider the source of revenue as well as the over-all amount collected?
4. a. To what extent does the present American federal tax system provide built-in flexibility that automatically contributes to stability?
 b. To what extent do expenditures possess built-in flexibility that automatically contributes to stability?
 c. Should not the fiscal authorities be vested with the same administrative discretion as is possessed by the monetary authorities?
5. a. Governments in wartime emphasize sale of their obligations as far as possible to others than commercial banks. Show why, tracing the effect of sale to each of the two classes of purchasers.
 b. Does sale to a Federal Reserve bank have an effect different from that due to sale to a commercial bank? Is your answer the same irrespective of whether or not the Federal Reserve bank is pursuing a policy of supporting the price of United States Government obligations?
6. a. The Treasury has a surplus which it wishes to apply to debt retirement. By tracing the effects in each case, compare the relative merits of retiring debt held by individuals, commercial banks and Reserve banks.
 b. What are the advantages and disadvantages to the Treasury of having the government debt in long-term in contrast to short-term form?
7. a. How did the Federal Reserve banks aid the Treasury in maintaining the rate structure— $\frac{3}{8}$ percent on 90-day bills, $\frac{7}{8}$ percent on 1-year certificates, 2 percent on 10-year and $2\frac{1}{2}$ percent on 25-year bonds—that prevailed during and after World War II?
 b. Was there as much justification for maintaining this structure after hostilities ceased as existed during the war? Cite advantages and disadvantages during each period.
8. a. Do you believe that the operations of the government lending (and insuring or guaranteeing) agencies as a class promoted economic stability? Have you any suggestions for improvement?
 b. What do you regard as the proper relation of the Treasury to the Reserve banks?

9. Indicate in the appropriate columns to the right the probable immediate consequences of the actions indicated in the statements to the left. Use + (increase), - (decrease) and = (no change).

	Amount of reserves of Federal Reserve banks	Amount of reserves of member banks	Reserve ratio of member banks	Amount of deposits of member banks
a. A run on the banks because of fear of their solvency.				
b. A sale of government bonds by the Federal Reserve banks to member banks.				
c. A transfer of funds by the federal Treasury from the Federal Reserve banks to the member banks.				
d. A sale of bonds by the government to the member banks.				
e. A purchase of gold by the government from gold miners.				
f. An excess of receipts over expenditures by the federal government, and the use of the surplus for the retirement of government bonds held by				
(1) the member banks.				
(2) the Reserve banks.				
g. An excess as in f and the accumulation of the excess in deposits to the credit of the government in the Reserve banks.				
h. A decrease (both absolute and relative to deposits) in the use of hand-to-hand currency.				
i. An increase in the velocity of circulation of hand-to-hand currency and deposits.				

If you think there are ambiguities or uncertainties in the above cases, explain.

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U. S. Congress, Joint Committee on the Economic Report, Subcommittee on General Credit Control and Debt Management, *Hearings, Replies to Questions and Other Material, and Report*, 82d Cong., 2d Sess. (1952). Known as the Patman committee.

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APPENDIX I

THE FACTORS AFFECTING BANK RESERVES

The prime determinant of the monetary stock is the earning assets of the commercial banks. Under present statutes the maximum volume of bank credit available in this country is limited to a multiple of the volume of funds which may be used as bank reserves. Thus, the banks' cash assets or reserves place a ceiling over the amount of deposits the banks can create in paying for their earning assets. The principal reserve item of the commercial banking system is a deposit credit with the Federal Reserve banks. The only funds which may be used for deposit in Reserve banks are gold, Treasury currency, Federal Reserve bank credit, and any assets which may be converted readily into these items. Thus, the term reserve fund refers to these three classes of items.

The ability of member banks to make loans and investments and their willingness or unwillingness to make them are influenced by (a) whether or not the banks have reserves or can acquire them and (b) the method through which these reserves are acquired. By observing two figures one can learn easily the reserve position of all member banks and in many respects can obtain knowledge of the relationship between the supply and use of bank credit. These figures are (1) the volume of excess reserves of member banks, that is, the amount of deposits of member banks in Federal Reserve banks which is in excess of that required by law, and (2) the volume of loans and discounts of Reserve banks to member banks.

Excess reserves suggest the volume of bank credit which member banks may extend without incurring a reserve deficiency, while the volume of loans and discounts of member banks with the Reserve bank shows the extent to which member banks are using Reserve bank credit to meet demands of their customers. There has been a definite relationship between changes in supply and use of reserve funds and competitive interest rates, particularly rates in the short-term money market. When a shortage of supply of reserve funds is met by member banks discounting with Reserve banks, interest rates tend to increase. When excess reserves persist, interest rates tend to decline and remain at low levels. Study of changes in interest rates and the availability of credit, therefore, is essentially a matter of observing the supply and use of reserve funds of banks.

By presenting a balanced statement showing the various currency and banking elements that influence or correspond to increases or decreases in the supply and use of member bank reserves, the Federal Reserve authorities have developed a device to enable them to make decisions on credit policy. The balanced statement is taken from the statement of condition of the twelve Federal Reserve banks and the United States

Treasury statement of circulation of United States money. The circulation statement of the Treasury is needed since the Treasury has important currency and credit functions that affect the volume of member bank reserves.

A detailed breakdown of the factors affecting the supply and use of reserve funds is found in Table 37. These are portrayed graphically in

TABLE 37
SUPPLY AND USE OF RESERVE FUNDS

<i>Factors Supplying Reserve Funds</i>	<i>Factors Using Reserve Funds</i>
1. Reserve bank credit	1. Money in circulation
A. Bills discounted	2. Treasury cash holdings
B. Bills bought (acceptances purchased)	3. Treasury deposits with Reserve banks
C. Industrial advances (loans)	4. Nonmember bank deposits with Reserve banks
D. United States Government securities	5. Other Federal Reserve accounts
E. Other Reserve bank credit	6. Member bank reserve balances
2. Monetary gold stock	
3. Treasury currency outstanding	

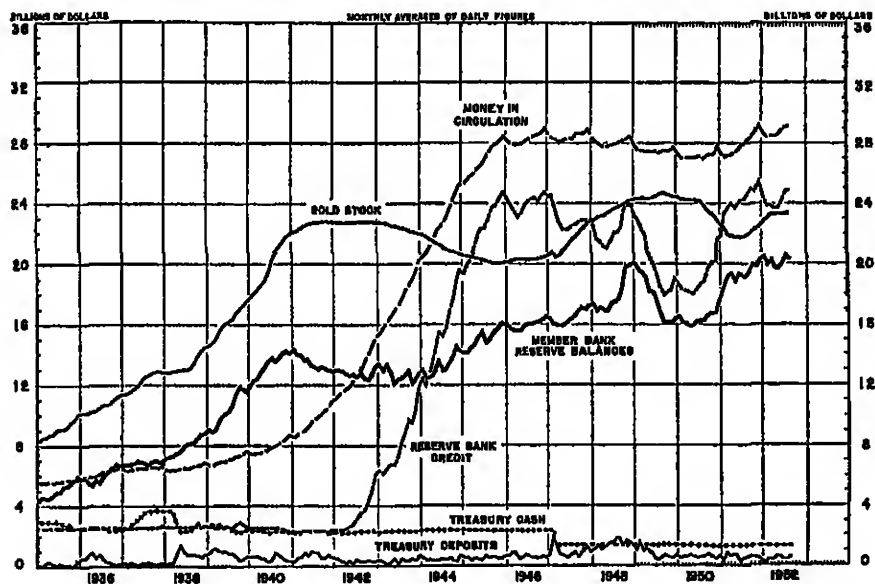
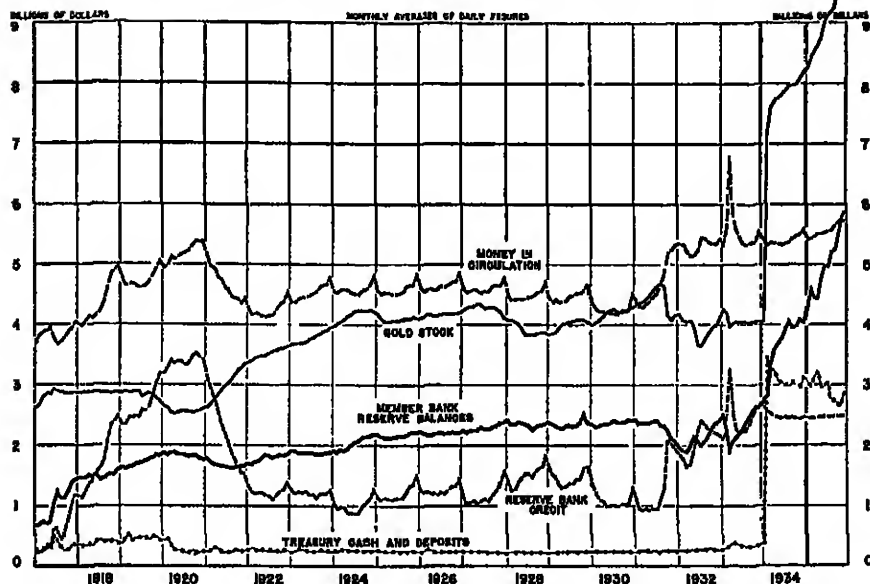
Figure 26. Since we have examined in detail in Chapters 14 and 15 how each of these items operates to alter the reserve position of the member banks, only brief reference will be made to these transactions in the following section.

Figures showing the supply and use of reserve funds as of Wednesday of every week are published in the financial sections of leading newspapers every Friday. The figures are not published in as great detail as the items listed in Table 37; the summarized weekly figures on the supply and use of member bank reserve funds on July 2, 1952, are reproduced in Table 38, page 400.

The data in Table 38 provide the basic materials for analyzing monetary policy. The pressures on commercial banks' reserves arise from various sources. The central bank brings pressure through the items that appear under the caption "Reserve bank credit outstanding." The commercial banks as a group attempt to alter their reserve position by selling earning assets to the Reserve banks, which appear under Reserve bank credit outstanding. The Treasury exerts its influence over bank reserves through variations in Treasury currency outstanding, Treasury cash holdings, and Treasury deposits with the Reserve banks. The public affects the stock of money by its decision to draw currency into circulation or to return it. The foreign exchange market alters our bank reserves with its imports or exports of gold. Other operations of the Reserve system also affect the banks' reserve position. In addition, the data on the supply and use of bank reserves are important because they show the

FIGURE 26

MEMBER BANK RESERVES AND RELATED ITEMS



SOURCE: Board of Governors of the Federal Reserve System.

TABLE 38
SUPPLY AND USE OF RESERVE FUNDS, JULY 2, 1952
(In millions of dollars)

<i>Supply</i>		<i>Use</i>	
1. Federal Reserve bank credit outstanding	\$24,155	1. Money in circulation	\$29,180
2. Gold stock	23,346	2. Treasury cash	1,277
3. Treasury currency outstanding	4,755	3. Treasury deposits in Reserve banks	90
		4. Nonmember deposits	760
		5. Other Federal Reserve accounts	798
		6. Member bank reserve balances	20,153
	<u>\$52,256</u>		<u>\$52,258</u>

NOTE: Totals do not balance due to rounding.

SOURCE: *Federal Reserve Bulletin*.

amount of potential credit which can be extended by the member banks at that time.

The significance of the supply and use of reserve funds grows when the figures for one date are compared with those of another. By studying changes in underlying monetary conditions on different dates we can examine the influence of these figures as they affect member bank reserve funds. For example, increases in the monetary gold stock, Reserve bank credit, and Treasury currency increase reserve balances while decreases in these items decrease reserves. Conversely, increases in money in circulation, Treasury cash and Treasury deposits with Reserve banks, non-member bank deposits with Reserve banks, and other Federal Reserve accounts reduce member bank reserves; decreases in these items expand the reserves of member banks.

Before discussing the method of comparing underlying monetary conditions on different dates we shall undertake by way of review a brief explanation of each item which gives rise to funds which banks may use to establish reserves and each item showing the use being made of these reserve funds.

FACTORS SUPPLYING RESERVE FUNDS

1. RESERVE BANK CREDIT.

Represents principally the loans and investments of the Reserve banks.
A. Bills discounted.

Represents discounts for and advances to member banks and non-

member banks which borrow in order to maintain adequate reserves against deposit liabilities. At times this item also includes loans on gold to foreign central banks, advances to Federal Intermediate Credit Banks, or advances to individuals, partnerships, and corporations.

B. Bills Bought (Acceptances Purchased).

Represents bankers' and trade acceptances purchased by the Reserve banks from bill dealers or banks either outright or under resale agreement and acceptances payable in foreign currencies purchased from foreign central banks and guaranteed by them.

As we saw earlier Reserve banks generally purchase all bills of satisfactory quality offered at their established buying rate. This rate is made lower than the market rate if the Reserve authorities want to encourage sale of bills to them and made higher than the market rate if they want to discourage sales to them.

C. Industrial Advances (Loans).

Represent advances made to business directly by Reserve banks under Section 13b of the Reserve Act. These advances have the effect of supplying member banks with reserve funds since the business concern deposits the check on the Reserve bank with a commercial bank which thereby acquires a claim against the Reserve bank.

D. United States Government Securities.

Government securities are purchased by the Reserve banks in the open market upon their own initiative. Since 1922 these securities are held in the System's investment account participated in by all Reserve banks. Purchases may be made for the purpose of supplying needed reserve funds to member banks or in order to maintain an orderly market for government securities (in which case member banks reserves are increased too).

E. Other Reserve Bank Credit.

This item is a catch-all and includes:

- (1) Funds held on deposit in foreign banks.
- (2) Other securities such as Federal Intermediate Credit Bank Debentures, municipal warrants, etc., owned by Reserve banks.
- (3) Federal Reserve bank float. This item represents transit items that are credited to the account of the depositing bank prior to actual collection by the Reserve bank. An increase in float increases reserves of the banking system.

2. GOLD STOCK.

Gold has been the most important factor influencing reserves and borrowings of member banks over extended periods of time. The gold stock includes only gold held by the Treasury since the Gold Reserve Act of January 30, 1934, makes it illegal for anyone else to hold gold.

3. TREASURY CURRENCY.

Changes in Treasury currency have the same effects on bank reserves and borrowing as changes in the gold stock. Treasury currency repre-

sents the stock of money for which the Treasury is primarily responsible and includes: standard silver dollars, that part of the silver bullion which is pledged against silver certificates and Treasury notes of 1890 outstanding, subsidiary silver and minor coin, United States notes, and those national bank notes and Federal Reserve bank notes for the retirement of which funds have been deposited with the Treasurer of the United States; Treasury currency *does not include* Federal Reserve notes, gold coin, and gold certificates. Treasury currency outstanding includes the above currencies held in the Treasury and in the Federal Reserve banks as well as in circulation.

FACTORS USING RESERVE FUNDS

1. MONEY IN CIRCULATION.

Since member banks obtain money to hold or pay out to customers by drawing on their reserve balances, increases in money in circulation (all kinds of United States money outside the Reserve banks and the Treasury) cause corresponding decreases in reserve balances, and decreases in money in circulation have the opposite effect.

Changes in currency in circulation reflect the demands of the public for cash money, principally for current payments and at times for the holding of savings. Since currency in circulation generally shows wide seasonal variations it has an important influence on short-run changes in bank reserves. The increase in currency in circulation especially since 1933 has absorbed a substantial amount of bank reserves.

2. TREASURY CASH AND TREASURY DEPOSITS WITH FEDERAL RESERVE BANKS.

These items represent the funds which the Treasury has at its disposal without drawing on its balances with depository banks. When the Treasury builds up its cash or its deposit balances with the Reserve banks by obtaining funds through taxes or borrowing (from either the public or the banks), bank reserves are reduced. When the Treasury spends these funds, the reserves of the banks are increased. In view of irregular Treasury receipts accompanied by more regular and gradual variations in expenditures fluctuations in Treasury cash and Treasury deposits have been sharp--thereby leading to sharp changes in bank reserves. Treasury cash includes:

- A. Gold bullion against which gold certificates have not been issued.
- B. Silver bullion which is not held against silver certificates issued or against Treasury notes of 1890.
- C. Minor coin and currency held in the Treasury.

Treasury deposits with Reserve banks represent the general account of the United States Treasurer with the Reserve banks. The account maintained by the Treasury at the Reserve banks for the Stabilization Fund is included in nonmember deposits.

3. NONMEMBER DEPOSITS.

Represents all deposits with the Reserve banks other than the general

account of the United States Treasurer and member bank reserve balances. It includes:

- A. Deposits of nonmember banks—mostly clearing balances.
- B. Deposits of foreign central banks and governments.
- C. Reserve bank officers' checks.
- D. The Stabilization Fund.

Increases in these items are reflected in decreases in reserve balances unless offset by other factors.

4. OTHER FEDERAL RESERVE ACCOUNTS.

This item is derived by adding:

- A. Capital.
- B. Surplus.
- C. Other capital accounts.
- D. Other liabilities.

and subtracting:

- A. Bank premises.
- B. Other assets.

Increases in this item represent withdrawal of funds from the market by the Reserve banks.

5. MEMBER BANK RESERVE BALANCES.

This item represents reserve balances held by the member banks at Reserve banks. Since the Reserve bank condition statement does not report the reserve balances broken down into required and excess reserves, the data must be obtained from member bank reports of their deposit liabilities.

In reviewing conditions which give rise either to excess reserves or cause member banks to borrow, the use of the tables on Supply and Use of Reserve Funds is extremely helpful. It shows the volume of reserve funds and how they are being used. By comparing the data as of one date with those of another an extremely clear picture of a wide variety of trends in underlying monetary conditions may be observed.

Table 39 shows the supply and use of reserve funds at the end of 1933 and 1940 and as of June 28, 1950, and the end of 1950. It presents an excellent panorama of monetary changes during these two periods.

A few significant changes in monetary conditions between 1933 and 1940 as revealed by Table 39 are noted.

1. The thirties will go down in history as the decade of unprecedented gold movements to the United States. Movements of gold to this country resulted in part from international conditions and in part from governmental policies. In January 1934 the value of an ounce of gold was increased from \$20.67 to \$35.
2. The gradual increase in Treasury currency outstanding is largely the result of the government's silver purchase program launched in 1934.
3. Reserve bank credit actually declined slightly and thereby kept the

TABLE 39

CHANGES IN SUPPLY AND USE OF RESERVE FUNDS
(In millions of dollars)

	1933	1940	+ Increase in reserves, — decrease in reserves	June 28, 1950	December 27, 1950	+ Increase in reserves, — decrease in reserves
<i>Source of Reserves</i>						
Reserve bank credit	\$2,688	\$ 2,275	\$— 413	\$18,567	\$21,720	\$+3,153
Gold stock	4,036	21,995	+17,959	24,230	22,795	—1,435
Treasury currency outstanding	2,303	3,087	+ 784	4,608	4,631	+ 23
Total	\$9,027	\$27,357	\$+18,330	\$47,405	\$49,146	\$+1,741
<i>Use of Reserves</i>						
Money in circulation	\$5,519	\$ 8,732	\$— 3,213	\$27,026	\$27,916	\$— 890
Treasury cash	284	2,213	— 1,929	1,306	1,295	+ 11
Treasury deposits in Federal Reserve bank	3	368	— 365	866	786	+ 80
Nonmember deposits and other Federal Reserve accounts	492	2,016	— 1,524	2,219	1,975	+ 244
Member bank reserve balances	2,729	14,026	—11,297	15,988	17,174	—1,186
Total	\$9,027	\$27,355	\$—18,328	\$47,405	\$49,146	\$—1,741
Excess reserves	859	6,615	+ 5,756	526	759	+ 233

SOURCE: *Federal Reserve Bulletin*.

increase in member bank reserves permitted by the factors supplying reserve funds to about \$18.3 billion.

4. Money in circulation increased and reduced reserves by \$3.2 billion. Had there been no increase in reserves, this movement would have caused tightening of money rates.
5. Other items which reduced bank reserves increased during this period. Despite this member bank reserve balances increased by about \$11.3 billion.
6. Excess reserves rose by \$5.8 billion and at the end of 1940 amounted to \$6.6 billion—a figure never before attained in the history of the Reserve System.

The changes in monetary conditions between June 1950 and December 1950 are shown also because they point up the effects of the bond support program in tying the hands of the Reserve authorities in their attempt to control the post-Korea inflation. Despite a decrease in the monetary gold stock and an increase in money in circulation, both of which led to a decrease in reserve balances of some \$2.3 billion, purchases of government securities by the Reserve banks added more than this amount to bank reserves. The enhanced bank reserves enabled the banking system to continue to make loans and investments, thereby writing up deposits and adding to the inflationary pressures.

APPENDIX 2

THE MONETARY STOCK OF THE UNITED STATES¹

The nation's monetary stock originates in three sectors which comprise the monetary system. These sectors are (1) the commercial banks, (2) the Federal Reserve banks, and (3) the Treasury. Each part of the monetary system can be described by its balance sheet which is arranged as follows:

$$\text{Assets} = \text{Liabilities} + \text{Capital Accounts}$$

The assets consist of cash assets that can be used to pay off debts, and earning assets that yield income. The gross liabilities of the monetary system consist of (1) gross monetary liabilities (fixed-price debts generally accepted as a means of payment), (2) all nonmonetary liabilities (liabilities which are not fixed-price debts or are not generally accepted as a means of payment²), and (3) capital accounts. The nonmonetary liabilities (all debts which are not both fixed in price and widely accepted as means of payment) and the capital accounts (claims of stockholders to the residue of assets after the creditors' claims are paid off) represent claims on the monetary system which cannot be used as means of payment.

Subtracting nonmonetary liabilities and capital accounts from the gross liabilities yields a figure which represents gross monetary liabilities. Debts owed by one sector of the monetary system to another part (intrasystem monetary liabilities) are not available to persons and firms outside the monetary system as means of payment. The net monetary liabilities of the monetary system represent the nation's monetary stock; the figure for the monetary stock is obtained by deducting intrasystem liabilities from the gross monetary liabilities.

¹ Beginning with the June 1949 issue of the *Federal Reserve Bulletin* the Federal Reserve System presents a monthly consolidated balance sheet for the monetary system under the heading "Consolidated Condition Statement for Banks and the Monetary System." The construction of the Federal Reserve series is explained in M. A. Copeland and D. H. Brill, "Banking Assets and the Money Supply since 1929," *Federal Reserve Bulletin* (January 1948).

The Reserve System's series differs from the one presented here in several particulars. First, it defines money to include time and savings deposits. Second, it includes mutual savings banks, the Postal Saving System, and the Exchange Stabilization Fund as sectors of the monetary system. Third, it provides complete coverage of all commercial banks whereas we include only the insured commercial banks for which complete data are readily available. Fourth, it classifies some minor accounts differently than is done in this presentation.

The obligation of the authors for the treatment found in E. S. Shaw, *Money, Income and Monetary Policy* (Chicago, 1950), Chaps. 2 and 3, is gratefully acknowledged.

² The reader will recall that in Chapter 1, page 9 ff., and in Chapter 2, page 28 ff.; an explanation was given for excluding time deposits (fixed-price debts) from the stock of money.

The monetary equation for each sector of the monetary system can be stated as follows:

$$\text{Monetary Liabilities} = \left[\begin{array}{c} \text{Cash Assets} \\ + \\ \text{Earning Assets} \end{array} \right] - \left[\begin{array}{c} \text{Intrasystem Monetary} \\ \text{Liabilities} \\ + \\ \text{All Nonmonetary} \\ \text{Liabilities} \\ + \\ \text{Capital Accounts} \end{array} \right]$$

In order to obtain a measure of the nation's stock of money at a given moment of time, it is necessary to select from each of the three sectors only those liabilities which consist of fixed-price debts generally acceptable as means of payment and are owed to persons or firms outside the system. The total monetary liabilities of the three sectors will yield a figure for the total monetary stock.

The stock of money (monetary liabilities) derived differs from the concept of "currency in circulation plus demand deposits adjusted" which has been used thus far in this book. There are three important differences between these two concepts. Our earlier definition involved some double counting. Currency in circulation includes currency held by the commercial banks in their own vaults. We can deduct from currency in circulation the amount of Treasury currency and Federal Reserve notes held by the commercial banks and get a figure for currency in circulation outside the banks which eliminates intrasystem assets and liabilities. The second factor of difference is that the new figure for monetary liabilities (monetary stock) includes the balances of the government with commercial banks whereas "demand deposits—adjusted," excludes these balances. Thirdly, government deposits with the Reserve banks together with deposits of foreign banks and other deposits with the Reserve banks are here also included as part of the stock of money. We assume that the United States Government bank balances, like money balances of the private sector of the economy, are potential sources of expenditures which have similar repercussions upon the economy as do private expenditures. Thus, there are perfectly valid reasons for extending the definition of money to include these balances as well as those owed to foreigners who can use these balances to make payments in the United States.³

In recent years attempts have been made to go beyond the mere summation described above and to present monetary data for the system as a whole in the form of a single consolidated statement. As we shall see,

³ Our figure for the monetary stock understates the monetary stock because we have dealt in Table 40 only with the insured commercial banks. We have excluded the uninsured commercial banks and some savings banks which have demand liabilities. The only reason for this omission is the ready availability of complete balance sheet data on insured banks whereas data for the uninsured banks are difficult to obtain. The net monetary liabilities of the banks omitted from our tables came to about \$1.3 billion at the end of 1950.

such a statement provides a convenient framework within which the net results of changes which are continuously taking place within the system can be explained in quantitative terms.

In order to derive a consolidated statement for the monetary system, we shall first deal with the statement of each of the three sectors of the monetary system. These data are presented in Tables 40, 41, and 42.

TABLE 40

ASSETS AND LIABILITIES OF THE INSURED COMMERCIAL BANKS,
DECEMBER 31, 1950

(In billions of dollars)

<i>Assets</i>		
1. Cash		\$ 39,864.5
a. Currency and coin	\$ 2,164.8	
b. Reserve with Reserve banks	17,458.0	
c. Balance with banks in U. S.	10,480.9	
d. Balances with banks in foreign countries	142.3	
e. Cash items in process of collection	9,618.5	
2. Investments		73,198.0
a. Net worth in Reserve banks	868.6	
b. All other investments	72,329.4	
3. Loans (net)		51,808.6
a. Loans to banks	90.0	
b. All other loans	51,718.6	
4. Other assets		1,920.6
Total assets		<u>\$166,791.7</u>
<i>Liabilities and Capital Accounts</i>		
I. Demand deposits		\$102,145.1
a. Due to individuals, partnerships, and corporations	\$89,992.8	
b. Due to U. S. Government	2,794.0	
c. Due to state and local governments	7,915.9	
d. Due to banks in foreign countries	1,442.4	
II. Certified and officers' checks, etc.		2,904.7
Total demand liabilities		<u>\$105,049.8</u>
III. Time deposits		36,462.3
IV. Domestic interbank deposits		11,985.5
V. Liabilities for borrowed money		87.1
VI. Miscellaneous liabilities		1,926.1
VII. Net worth		11,280.9
Total liabilities and capital accounts		<u>\$166,791.7</u>

TABLE 41

ASSETS AND LIABILITIES OF THE FEDERAL RESERVE BANKS,
DECEMBER 31, 1950

(In billions of dollars)

<i>Assets</i>		
5. Cash		\$ 21,724.3
a. Gold certificates reserves	\$21,457.6	
b. Other cash	266.7	
6. Discounts and advances		67.4
7. Industrial loans		2.5
8. U. S. Government securities		20,777.6
9. Float		1,368.4
a. Uncollected items	4,270.0	
b. Less deferred availability items	2,901.6	
10. Federal Reserve notes of other Reserve banks		170.1
11. Miscellaneous assets		160.4
Total assets		<u>\$ 44,270.7</u>
<i>Liabilities and Capital Accounts</i>		
VIII. Net issues of Federal Reserve notes (of which \$1,840 are estimated to be in the commercial banks) ^a		\$ 23,587.0
IX. Deposits		19,809.5
a. Member banks' reserve account	\$17,680.7	
b. U. S. Treasurer—general account	668.5	
c. Foreign deposits	895.4	
d. Other deposits	564.9	
X. Other liabilities		5.6
XI. Net worth		868.6
Total liabilities and net worth		<u>\$ 44,270.7</u>

^a Federal Reserve notes in insured banks are estimated on the assumption that these notes make up the same proportion of insured banks' vault cash as they do of total balances in currency held by all commercial banks and the public together. See E. S. Shaw, *Money, Income and Monetary Policy* (Chicago, 1950), p. 41.

The data for the monetary accounts of the Treasury are restated since the presentation of Treasury statistics does not conform to the standard asset and liability account. In Table 42 Treasury currency outstanding refers to the assets that the Treasury holds as backing for its currency outstanding. Every dollar outstanding is backed by a counterpart fund either in silver bullion in the Treasury vault or in the metallic content of the outstanding coins or in the Treasury's own securities which serve as collateral for notes once issued by the Reserve banks or the national

TABLE 42

MONETARY ACCOUNTS OF THE TREASURY, DECEMBER 31, 1950

(In billions of dollars)

<i>Assets</i>		
12. Monetary gold stock		\$ 22,706.0
13. Treasury currency outstanding		4,636.0
Total		<u>\$ 27,342.0</u>
<i>Liabilities and Capital Accounts</i>		
XII. Gold certificates in Reserve banks		\$ 21,458.0
XIII. Treasury currency in banks		592.0
a. In Reserve banks	\$ 267.0	
b. In commercial banks	325.0	
XIV. Monetary liabilities of Treasury		4,053.0
a. Gold certificates	40.0	
b. Treasury currency	4,013.0	
XV. Treasury cash (net worth)		1,239.0
a. In gold	1,208.0	
b. In Treasury currency	31.0	
Total		<u>\$ 27,342.0</u>

banks. Treasury cash represents unissued asset values (such as silver bullion against which the full \$1.29 of silver certificates per ounce permitted by law has not been issued) which are best thought of as representing the Treasury's net worth in its monetary account.

The monetary liabilities of the commercial banks on December 31, 1950, consisted of:

I	Demand deposits	\$102,145.1
II	Certified and officers' checks	2,904.7
	Gross monetary liabilities	<u>\$105,049.8</u>
	less	
	1(e) Cash items in process of collection	9,618.5
	Net monetary liabilities	<u>\$ 95,431.3</u>

The figure for gross demand deposits overstates the amount of demand deposits since it involves double counting. Checks that are deposited by the payee in his bank swell the total of his deposit balance before they are paid by the bank on which the check is drawn and before the amount of the check is deducted from the deposit account of the writer of the

check. To eliminate this double counting, the cash items in process of collection are deducted from demand deposits.

The gross nonmonetary liabilities of the commercial banks consist of

III	Time deposits	\$ 36,462.8
IV	Domestic interbank deposits	11,985.5
V	Liabilities for borrowed money	87.1
VI	Miscellaneous liabilities	1,926.1
	Gross nonmonetary liabilities	<u>\$ 50,461.0</u>

To get a net figure we deduct:

1(c)	Balances with banks in U. S.	\$10,480.9
3(a)	Loans to banks	90.0
	Total	<u>10,570.9</u>
	Net nonmonetary liabilities	<u>\$ 39,890.1</u>

Debts owed by one bank to another are intrasystem liabilities that would cancel out if there were only one large bank in the United States. The debts and corresponding claims do not net out to zero because our data cover only insured commercial banks, hence data for uninsured banks are not included.

The net worth of the commercial banks is derived from:

VII	Net worth	\$ 11,280.9
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The net assets of the commercial banks are claims of the banks on other than domestic commercial banks. Net cash assets consist of the remaining cash assets as follows:

1(a)	Currency and coin	\$ 2,164.8
1(b)	Reserves with Reserve banks	17,458.0
1(d)	Balances with foreign banks	142.3
	Net cash assets	<u>\$ 19,765.1</u>

Net earning assets of the commercial banks consist of the gross earning assets less interbank loans. Since interbank loans were deducted from gross nonmonetary liabilities to derive net nonmonetary liabilities we must also deduct them from the assets. Thus,

2	Investments	\$ 73,198.0
3	Loans	51,808.6
4	Miscellaneous assets	1,920.6
	Gross earning assets	<u>\$126,927.2</u>
less		
3(a)	Loans to banks	90.0
	Net earning assets	<u>\$126,837.2</u>

Substituting the figures derived above in the monetary equation for the commercial banks our results are:

$$\text{Monetary Liabilities} = \left[\begin{array}{c} \text{Net Cash Assets} \\ + \\ \text{Net Earning Assets} \end{array} \right] - \left[\begin{array}{c} \text{Net Nonmonetary} \\ \text{Liabilities} \\ + \\ \text{Net Worth} \end{array} \right]$$

or

$$\$95,431.3 = \left[\begin{array}{c} \$19,765.1 \\ + \\ \$126,837.2 \end{array} \right] - \left[\begin{array}{c} \$39,890.1 \\ + \\ \$11,280.9 \end{array} \right]$$

or

$$\$95,431.3 = \$146,602.3 - \$51,171.0 = \$95,431.3$$

The monetary liabilities as of the Federal Reserve banks on December 31, 1950, consisted of:

VIII	Net issues of Federal Reserve notes		\$ 23,587.0
less			
10	Federal Reserve notes of other Reserve banks	\$ 170.1	
1(a)	Federal Reserve notes in commercial banks	1,840.0	
			<u>2,010.1</u>
	Federal Reserve notes outside Reserve and commercial banks		\$ 21,576.9
plus			
IX(b)	Deposits—U. S. Treasurer general account	\$ 668.5	
(c)	Foreign deposits	895.4	
(d)	Other deposits	564.9	
			<u>2,128.8</u>
	Total monetary liabilities		\$ 23,705.7

Federal Reserve notes held by other Reserve banks and by commercial banks are deducted from net issues of Reserve notes in order to obtain a measure of Reserve notes outstanding in the hands of persons or firms other than the Reserve banks and the commercial banks.

The nonmonetary liabilities consist of:

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IX(a) Member banks' reserve account	\$ 17,680.7
1(a) Reserve notes in commercial banks ⁴	1,840.0
X Other liabilities	5.6
	<u>\$ 19,526.3</u>

The net worth of the Reserve banks is derived from

XI Net worth	\$ 868.6
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The cash assets are arrived at by adding the following:

5(a) Gold certificate reserves	\$21,457.6	
5(b) Other cash	226.7	
Total cash assets		\$ 21,724.3

The earning assets of the Reserve banks consist of:

6 Rediscounts and advances	\$ 67.4	
7 Industrial loans	2.5	
8 U. S. Government securities	20,777.6	
9 Float	1,368.4	
11 Miscellaneous assets	160.4	
Total earning assets		\$ 22,376.3

By substituting the figures derived above into our monetary equation for the Reserve banks we get the following:

$$\text{Monetary Liabilities} = \left[\begin{array}{c} \text{Cash Assets} \\ + \\ \text{Earning Assets} \end{array} \right] - \left[\begin{array}{c} \text{Nonmonetary Liabilities} \\ + \\ \text{Net Worth} \end{array} \right]$$

or

$$\$23,705.7 = \left[\begin{array}{c} \$21,724.3 \\ + \\ \$22,376.3 \end{array} \right] - \left[\begin{array}{c} \$19,526.3 \\ + \\ \$868.6 \end{array} \right]$$

or

$$\$23,705.7 = \$44,100.6 - \$20,394.9 = \$23,705.7$$

The Treasury's monetary liabilities consist of a small amount of gold certificates and a larger amount of Treasury currency held outside the monetary system.

The figure for gold certificates held outside the monetary system is obtained as follows:

⁴ See item VIII.

12	Monetary gold stock		\$ 22,706.0
	less		
XII	Gold certificates in Reserve banks	\$21,458.0	
XV(a)	Treasury cash in gold	<u>1,208.0</u>	<u>22,666.0</u>
	Gold certificates		\$ 40.0

Treasury currency held outside the monetary system is derived as follows:

13	Treasury currency outstanding		\$ 4,636.0
	less		
XIII	Treasury currency in banks	\$ 592.0	
XV(b)	Treasury cash in currency	<u>31.0</u>	<u>623.0</u>
	Treasury currency		\$ 4,013.0

Our next step is to utilize the framework we have developed in order to derive a consolidated statement for the monetary system as a whole at the end of 1950. In essence, the procedure for consolidating the three sector balance sheets into one consolidated balance sheet can be summarized in conceptual terms as follows:

1. Summating the gross liabilities for the three sectors yields total gross liabilities (including capital accounts).

2. Some portion of total gross liabilities consists of items owed by one sector to another within the system. These items do not form part of the nation's monetary stock. The total of such intrasystem liabilities must be subtracted from the total gross liabilities in order to derive the total net liabilities including net capital accounts.

3. The total net liabilities do not comprise the entire stock of money. Part of the net liabilities owed by the monetary system are not money as we have defined it. Time deposits owed to persons or firms outside the system are a part of net liabilities yet they are not a part of monetary stock. In addition, the net capital accounts represent claims on the monetary system which are not a part of the monetary stock. Thus, the net liabilities can be divided into three categories: (a) net monetary liabilities, (b) nonmonetary liabilities and (c) net capital accounts.

4. Summating the gross assets of the three sectors yields total gross assets.

5. Total intrasystem liabilities are equal to total intrasystem assets since they appear as intrasystem liabilities in one balance sheet and as cash or earning assets in another. In summating the balance sheets of the three sectors the intrasystem assets and liabilities cancel each other.

6. Part of the capital accounts are owed by one sector of the monetary system to another. For example, the capital stock of Federal Reserve Banks is owned by the member banks. Thus, intrasystem capital accounts appear as assets in one balance sheet and capital accounts in another.

In summing the sector balance sheets intrasystem assets and part of the capital accounts cancel out leaving net capital accounts owed to persons and firms outside the monetary system.

When the balance sheets for the three sectors are merged, intrasystem assets and liabilities and capital accounts cancel out and the monetary equation for the system can be rewritten as follows:

$$\text{Monetary Liabilities} = \left\{ \begin{array}{c} \text{Net Cash} \\ \text{Assets} \\ + \\ \text{Net Earning} \\ \text{Assets} \end{array} \right\} - \left\{ \begin{array}{c} \text{Other Liabilities} \\ + \\ \text{Net Capital} \\ \text{Accounts} \end{array} \right\}$$

It will be recalled that Tables 40, 41, and 42 consisted of thirteen subitems among the assets and fifteen subitems among the liabilities and capital accounts. In consolidating the accounts of the three sectors of the monetary system, intrasystem claims drop out. In order to aid the reader to follow the process of consolidating the balance sheets of each of the three sectors, Table 43 is included. The intrasystem assets are deducted from the corresponding intrasystem liabilities and capital accounts. On the bottom of Table 43 the remaining items on the left side of the table represent net assets; the items on the right side of the table represent monetary liabilities, other liabilities, and net capital accounts.

The remaining items on the bottom of Table 43 can be arranged in tabular form to correspond to our equation for the consolidated monetary system. This is done in Table 44.

We can rewrite the items in Table 44 to conform to the monetary equation for the monetary system on December 31, 1950. Thus,

$$\text{Monetary Liabilities} = \left\{ \begin{array}{c} \text{Net Cash} \\ \text{Assets} \\ + \\ \text{Net Earning} \\ \text{Assets} \end{array} \right\} - \left\{ \begin{array}{c} \text{Nonmonetary Liabilities} \\ + \\ \text{Net Capital Accounts} \end{array} \right\}$$

or

$$\$121,821.6 = \left\{ \begin{array}{c} \$27,484.3 \\ + \\ \$146,909.1 \end{array} \right\} - \left\{ \begin{array}{c} \$40,051.0 \\ + \\ \$12,519.9 \end{array} \right\}$$

or

$$\$121,821.6 = \$174,893.4 - \$52,570.9 = \$121,822.5^a$$

The virtue of the monetary equation for the United States lies in its usefulness in summarizing the myriad of factors affecting the size of the monetary stock in a few figures. Thus, the monetary system was indebted

^a Totals do not balance due to rounding.

TABLE 43

WORK SHEET FOR CONSOLIDATING THE ACCOUNTS FOR THE THREE
SECTORS COMPRISING THE MONETARY SYSTEM, DECEMBER 31, 1950

<i>Intrasystem Assets</i>		
1(a)	Federal Reserve notes in commercial banks	\$ 1,840.0
10	Federal Reserve notes in other Reserve banks	<u>170.1</u>
		\$ 2,010.1
1(a)	Treasury currency in commercial banks	825.0
1(b)	Reserves with Reserve banks	17,458.0
1(c)	Balances with banks in U. S.	\$10,480.9
3(a)	Loans to banks	<u>90.0</u>
		10,570.9
1(e)	Cash items in process of collection	\$ 9,618.5
9	Float	<u>1,368.4</u>
		10,986.9
2(a)	Net worth in Reserve banks	868.6
5(a)	Gold certificate reserves	21,457.6
5(b)	Other cash	266.7
6	Discounts and advances	67.4
<i>Net Assets</i>		
1(d)	Balances with banks abroad	\$ 142.3
2(b)	Investments	72,329.4
3(b)	Loans	51,718.6
4	Other assets	1,920.6
7	Industrial loans	2.5
8	U. S. Government securities	20,777.6
11	Miscellaneous assets	160.4
12	Monetary gold stock	22,706.0
13	Treasury currency outstanding	<u>4,636.0</u>
		<u><u>\$174,893.4</u></u> ^a

TABLE 43 (Cont.)

<i>Intrasystem Liabilities and Capital Accounts</i>			
VIII	Federal Reserve notes outstanding	\$ 23,587.0	
	less	<u>2,010.1</u>	
			\$ 21,576.9
XIII(b)	Treasury currency in com'l banks		325.0
IX(a)	Member bank reserve account	\$ 17,680.7	
	less	<u>17,458.0</u>	
			222.7
IV	Domestic interbank balances	\$ 11,985.5	
	less	<u>10,570.9</u>	
			1,414.6
I	Demand deposits	\$102,145.1	
II	Cert. & officers' checks	<u>2,904.7</u>	
		\$105,049.8	
	less	<u>10,986.9</u>	
			94,062.9
XI	Net worth in Reserve banks		868.6
XII	Gold certificates in Reserve banks		21,458.0
XIII(a)	Treasury currency in Reserve banks		267.0
V	Liabilities for borrowed money	\$ 87.1	
	less	<u>67.4</u>	
			19.7
<i>Net Liabilities and Capital Accounts</i>			
VIII	F. R. notes outside monetary system		\$ 21,576.9
IX(a)	Net reserves of member banks		222.7
IV	Net balances due banks		1,414.6
I & II	Net demand deposits		94,062.9
V	Net liabilities for borrowed money		19.7
III	Time deposits		36,462.3
VI	Miscellaneous liabilities		1,926.1
VII	Net worth—commercial banks		11,280.9
IX	Deposits—U. S. Treasury	\$ 668.5	
	Foreign deposits	895.4	
	Other deposits	<u>564.9</u>	
			2,128.8
X	Other liabilities		5.6
XV	Treasury cash (net worth)		1,239.0
XIV	Monetary liabilities of Treasury		<u>4,053.0</u>
			<u>\$174,392.5</u> ^a

^a Difference due to rounding.

TABLE 44
CONSOLIDATED ACCOUNT OF THE MONETARY SYSTEM,
DECEMBER 31, 1950

<i>Monetary Liabilities</i>			
<i>Currency</i>			
VIII	Federal Reserve notes outside the monetary system	\$21,576.9	
XIV	Monetary liabilities of the Treasury	<u>4,053.0</u>	
	Total currency		\$25,629.9
<i>Demand Deposits</i>			
I & II	Monetary deposit liabilities of commercial banks	\$94,062.9	
IX(b,c,d)	Monetary deposit liabilities of Reserve banks	<u>2,128.8</u>	
	Total deposit liabilities		<u>96,191.7</u>
	Total monetary liabilities		<u><u>\$121,812.6</u></u>
<i>Cash Assets</i>			
1(d)	Balances with banks abroad	\$ 142.3	
12	Monetary gold stock	22,706.0	
13	Treasury currency outstanding	<u>4,636.0</u>	
	Net cash assets		<u><u>\$27,484.3</u></u>
<i>Earning Assets</i>			
2(b)	Investments	\$72,329.4	
3(b)	Loans	51,718.6	
4	Other assets	1,920.6	
7	Industrial loans	2.5	
8	U. S. Government securities	20,777.6	
11	Miscellaneous assets	<u>160.4</u>	
	Net earning assets		<u><u>\$146,909.1</u></u>
<i>Nonmonetary Liabilities</i>			
IX(a)	Net reserves of member banks	\$ 222.7	
IV	Net balances due banks	1,414.6	
V	Net liabilities for borrowed money	19.7	
III	Time deposits	36,462.3	
VI	Miscellaneous liabilities	1,926.1	
X	Other liabilities	<u>5.6</u>	
			<u><u>\$40,051.0</u></u>
<i>Net Capital Accounts</i>			
VII	Net worth—commercial banks	\$11,280.9	
XV	Treasury cash	<u>1,239.0</u>	
			<u><u>\$12,519.9</u></u>

to the public on monetary liabilities because it bought cash and earning assets, and the public had not chosen to accept payment for assets entirely in nonmonetary liabilities and equities of the monetary system.

The explanation of changes in the monetary stock can be examined by reference to expansive items which tend to increase the stock of money and contractive items which tend to decrease it. These items can be listed as follows:

Expansive Items

1. Increases in cash assets
2. Increases in earning assets
3. Decreases in nonmonetary liabilities
4. Decreases in net worth

Contractive Items

1. Decreases in cash assets
2. Decreases in earning assets
3. Increases in nonmonetary liabilities
4. Increases in net worth

Thus, if the monetary authorities wish to increase the monetary stock they must operate to affect the expansive items. Contrariwise, if they wish to decrease the monetary stock they must work on the contractive items. While our tables have shown all the items affecting the monetary stock, it should be readily apparent that many of these items are small and do not show much variation over time. The important items are:

1. Monetary gold stock.
2. Treasury currency outstanding.
3. Treasury cash.
4. U. S. Government securities of Reserve banks.
5. Investments of commercial banks.
6. Loans of commercial banks.
7. Time deposits of commercial banks.
8. Net worth of commercial banks.

Ordinarily an examination of these items is sufficient for the analysis of the stock of money outstanding at any one time or of changes in its size over a period of time.

The consolidated statement for the monetary system provides us with data to measure the size of the monetary stock at any one time. Thus, we know that the size of the monetary stock at a moment of time is explicable in terms of assets, nonmonetary liabilities, and net worth. By comparing financial statements for two dates we can measure the changes in the monetary stock and the factors that account for these changes in terms of changes in assets, nonmonetary liabilities and net worth.

In Table 45 we undertake to analyze the factors that explain the increase in the monetary stock from 1949 to 1950. The increase in the monetary stock over this period is explained in large measure by the increased volume of bank loans and the substantial increase in Reserve

TABLE 45
MONETARY STOCK OF THE UNITED STATES, 1949-1950

			Change 1949-1950	
	1949	1950	Expansive items	Contractive items
<i>Monetary Stock</i>				
Demand deposits				
Federal Reserve banks	\$ 2,338	\$ 2,129		\$ 209
Commercial banks	88,488	94,063	\$ 5,625	
Currency outside banks				
Treasury currency	4,041	4,053	12	
Federal Reserve notes	21,793	21,577		216
Total monetary stock	<u>\$116,610</u>	<u>\$121,822</u>	<u>\$ 5,637</u>	<u>\$ 425</u>
<i>Assets</i>				
Gold	\$ 24,427	\$ 22,706		\$1,721
Treasury currency out- standing	4,598	4,636	\$ 38	
U. S. Government securi- ties of Reserve banks	18,885	20,778	1,893	
Commercial bank invest- ments	74,992	72,329		2,663
Commercial bank loans	42,401	51,719	9,318	
<i>Nonmonetary Liabilities</i>				
Commercial bank—time deposits	36,020	36,462		442
<i>Net Worth</i>				
Commercial banks	10,649	11,281		632
Treasury cash	1,252	1,239	13	
Total expansive items			<u>\$11,262</u>	
Total contractive items				<u>\$5,458</u>
Change in monetary stock			5,212	
Discrepancy *	772	1,364		592

* Small items which are omitted.

bank holdings of government securities. The monetary stock did not rise more because of the reduction in the monetary gold stock as well as the decrease in bank investments. It should be clear from this table that open-market purchases by the Reserve System and increased bank lending helped to feed the fires of inflation after the outbreak of hostilities in Korea in June 1950.

PART IV

**MONETARY
THEORY**

CHAPTER 16

Money, Price Levels, and Economic Activity

THUS far we have been concerned for the most part with the problem of how the monetary stock is determined. We turn now to the more important question of how changes in the stock of money are related to changes in the economic life of a nation. This question can be divided into a number of closely related queries. How do changes in the money stock influence changes in (1) the general level of prices, (2) the relations between prices of individual or broad groups of commodities or services, and (3) the size of the national income and the level of output and employment.

Regulation of these magnitudes is the end toward which an understanding of and control over monetary factors are the means. It is important that the ends are examined and the goals are clearly defined before we attempt to trace the relationship between money and the functioning of the economic system.

■ CONSEQUENCES OF CHANGES IN THE VALUE OF MONEY

Among the earliest of problems encountered by a money-using society is the problem of changes in the value of the monetary unit. In everyday language we hear people say the dollar is "worth more" or "buys more" at one time than it does at others. People also say, "Prices are so much higher that the dollar is no longer worth what it used to be." The above remarks imply that

the value of the monetary unit varies inversely with the level of prices. This is indeed correct, but these reflections alone do not reveal the important problems which accompany changes in the value of money relative to goods and services.

In order to understand why "changes in the price level" are significant, we must examine the concept itself more closely. Broadly speaking, we can distinguish two separate classes of price changes.

First, there are those changes which take place in the price of an individual commodity or service *relative* to other commodity prices. Such changes are the result of a competitive price system in which all commodities are in competition with each other for the consumers' dollar. As consumer preferences change because of changes in tastes and fashion and as technical and natural conditions of production vary, the demand and supply relationships for particular commodities undergo continuous changes. Variations in supply and demand conditions are reflected in changes in the relations between the prices of different classes of commodities and services. When the monetary theorist speaks of alterations in the price level, it is not these changes which he has in mind. Changes in relative prices do no important harm to society as a whole and affect only those groups directly interested in the supply of the particular commodity whose position in the price structure undergoes an alteration. In fact, it is changes in relative prices which constitute the mechanism through which a free-enterprise society allocates its productive efforts in the directions indicated by the preferences of consumers as a whole.

Superimposed on these relative price changes are the so-called "general" changes in the price level which are reflections of monetary forces. We may have a rise in the dollar price of all goods, while at the same time the relative exchange value among goods themselves remains virtually unchanged. What has happened in such a case is that the value of the monetary unit (that is, its purchasing power over goods) has fallen. While the pattern of the price structure can remain unaltered, we shall demonstrate that this condition is not likely to occur.

DISTRIBUTION OF WEALTH AND INCOME

If the pattern of the price structure remained unaltered and all price changes were correctly foreseen, changes in the general level of prices in theory would have no disturbing effects upon society. The fact that the pattern of the price structure is altered when the price level changes creates economic as well as other broad social problems.

Let us consider a man who has saved \$2,000 in order to purchase a new automobile. After completing his saving car prices double, but his \$2,000 of savings have not changed at all. This man has lost half the value of a car and obviously suffers as a consequence of the price rise. To take another example, let us assume that an individual borrowed \$2,000 and used this money to purchase an automobile. The price of a car doubles, and the man now has an asset worth \$4,000. He can either keep his bargain purchase or can sell it, repay his debt which remains fixed at \$2,000, and clear \$2,000 in profits. This man has clearly benefited from the price rise.

Since a large fraction of society's wealth is held in the form of debts and debt instruments which are expressed in fixed (or relatively constant) dollar amounts, general price changes can and do have serious effects on the welfare of individuals as well as upon broad social and economic groups within society. A rise in prices favors certain groups at the expense of other groups. When prices rise, debtors as a whole benefit and creditors suffer. This result occurs because debts are expressed in terms of the monetary unit and a fall in the value (purchasing power) of the unit means that debtors now owe their creditors "less" in terms of command over physical quantities of goods and services than they borrowed.

Although some of the debt claims (for example, bonds) do have market prices which rise and fall somewhat with changes in the general price level, the bulk of debts can be considered almost rigidly fixed in comparison with the great variability of prices of goods and services. Higher prices in themselves, therefore, invariably cause a "loss" to creditor groups and conversely a "gain" to debtor classes.

The existence of debt contracts is not the only reason why price changes are never truly general (that is, all prices rise by the same amount and at the same time). A number of additional factors may cause some prices to be rigid relative to others. Prices fixed in advance, for example, rentals on leased property, are rigid as are wages or salaries arranged under a long-term contract. Other prices, such as the rates charged by public utilities, are also relatively stable and can be changed only after approval by a governmental agency which in practice is a slow procedure.

Another way of viewing this problem is to think of all those groups which have relatively fixed incomes—bondholders, landlords, salaried employees—as suffering a loss in real purchasing power when prices rise. On the other hand, shareholders, corporations, and businessmen whose incomes respond quickly and in the same direction as the movement of prices tend to benefit from rising prices. The effect of changing price levels on wage earners cannot be categorically

asserted. To the extent that earnings do not rise as rapidly as the price level, workers suffer from the lag between their receipts and their expenses.

During a period of falling prices, the sequence discussed above is reversed. Businessmen and debtors as a whole tend to suffer hardships; creditors, other fixed-income groups, and workers benefit from a fall in the general price level.

One great difficulty associated with changes in the price level is that none of the groups affected can protect themselves against the losses of purchasing power which they suffer. A fortunate few might be able to shift their holdings of wealth and their occupations so as to remain always within the "favored" section, but this is not possible for the majority of the nation. History is full of excellent examples of the maleffects of changes in the purchasing power of the monetary unit. Some of the changes in the price level have been more marked than others; these have brought widespread distress. The great "inflations" (decline in the value of money) of the French Revolution, post-World War I Germany, and more recently in Hungary, Greece, and China wiped out 50 percent and more of the real value of both the savings and income of the savers—all in a short space of time. The great "deflation" of the 1930's in this country brought distress to thousands of businessmen and farmers on whom the real burden of their debts grew more onerous with every fall in the price level.

Smaller fluctuations in the price level, although not as serious, have a similar unsettling effect—and are equally unjust. If the consequences of changes in the value of money which we have described were the only considerations involved, they would suffice to explain the concern which monetary authorities almost universally have had over the maintenance of a stable price level. But these changes can have another and even more important consequence. They can influence not only the distribution of wealth and income, but they also disturb the volume of physical production.

OUTPUT AND EMPLOYMENT

A rise in the price level provides a spur for the business groups who seek to increase their gains by increasing production and by increasing their borrowings in order to increase production. If full employment of resources already exists, this increase in activity can result only in a sharper increase in the price level. Thus, small fluctuations, if unchecked, can magnify themselves. The cumulative rise in the price level is encouraged in at least two ways.

Increases in loans and investments by the banking system increase the stock of money, thereby adding to the pressure on prices; income recipients step up their expenditures to avoid suffering a loss in the purchasing power of their money, thus increasing the velocity of money.

If permitted to continue, the rising price level and the accompanying fall in the value of money can bring about a situation in which people lose all confidence in money as a reasonable store of value. Purchasing power is diverted from its normal channels, and production follows suit. Meanwhile both the capacity and the willingness to save of the traditional investing (creditor) groups declines. Sooner or later the source of funds which a sound economy uses to finance its necessary replacement and net addition to its productive machinery dries up. Unless the state pours in new money to feed the inflationary situation, a reversal takes place. Activity declines, and a period of falling prices ensues. During this phase businessmen suffer, and suffer doubly because of the large amounts of fixed debt which they tended to incur during the preceding period of rising prices. Those groups most affected by the fall in the price level and the rise in the value of their money debts are pushed into financial embarrassment. This could easily entail a collapse in activity—and lead to a fall in production, a fall in employment and to widespread distress. Even those groups who traditionally benefit from lower prices can suffer. Creditors suffer when debtors, finding the burden too heavy, become insolvent. Salaries and wages are “worth more” because of lower prices, but more and more workers become unemployed and receive no earnings at all.

The foregoing description of events is neither typical nor inevitable. But it is a picture of what can happen and has happened very often. It is not surprising, therefore, that one of the cardinal aims of monetary policy has been to ensure a stability in the value of the monetary unit.

■ INDEX NUMBERS

One prerequisite to implementation of any policy designed to affect the “price level” or “value of money” is to determine some simple way in which changes in the price level may be measured. The general price level itself is an abstraction useful for simplifying problems of analysis, but to actually compute it in anything like a precise manner by including all the items in our society which are expressed in prices would be much too costly and time consuming. Thus, we must resort to approximations of varying de-

degrees of accuracy. Changes in various sets of prices are measured by the use of index numbers. The object of these index numbers is to combine the prices of a large number of goods and services into a single summary figure which, over the course of time, will reflect the changes that take place in the group of prices of which it is composed. In effect, summarizing the price level for all groups of prices into a single expression of the "general price level" is a step which can be taken if it is desired to obtain an abstract measure for the "value of money" in broadest available terms.

The choice of what set of prices to include in an index depends on the use to which the index is to be put. We have seen that changes in price levels are undesirable because all prices do not change at the same time to the same extent. Thus, retail prices of goods and the level of wages (which is the price of labor) may both be rising, but unless they rise in exactly the same proportion some group benefits at the expense of another. The solution, in recent years, has been to think in terms of meaningful "groups" or sets of prices—and to construct separate measures for retail prices, wholesale prices, farm prices, wages, etc., each as a separate group. Given these series, one must watch for relative changes as between one group and another. It is these group indexes which play an important part in determining economic policy. Thus, trade unions are interested in the index of wages relative to the index of retail prices or the index of "cost-of-living" prices (which is a retail index containing mainly those items labor tends to purchase). Farm groups are interested mainly in the index of the prices of manufactured goods relative to the index of prices of farm products for it is this relation which measures changes in the welfare of farmers. Manufacturers are affected by the relation between changes in the wholesale prices of their products relative to changes in the price of labor (wages) and the price of borrowed money (interest rates). Thus, before we attempt to construct an index number we must define its object. Once this is done the actual problems of construction can be tackled.

GENERAL DEFINITIONS

Simple Relative Index Number Series of economic data are frequently converted from absolute figures to relative figures to facilitate comparisons over time. Thus, if the price of wheat in 1945 was \$2 per bushel and in 1952 \$2.50 per bushel and if the price of cotton in 1945 was \$.25 per pound and in 1952 it was \$.20 per pound, it is much more simple and meaningful to say that the price of wheat was 25 percent above its 1945 level in 1952 and the price

of cotton was 20 percent below its 1945 level in 1952 than it is to give the absolute numbers. If we take the average price of wheat for each year for a number of years and express the figures as a percentage of say, the price in 1945, we have a simple relative index of the price of wheat based on the year 1945 as 100.

Composite Indexes Most indexes are not of the simple kind described above where we dealt only with one commodity. Typically we wish to combine a number of such series into one summary or aggregate index. It is to this type of measure that the term "index number" almost invariably refers.

Base Period In our example of the simple wheat index we used the year 1945 as the base on which all fluctuations were calculated. In constructing composite indexes the base year (or years if an average of several years is used as base) in each of the series remains the same.

PROBLEMS INVOLVED IN THE CONSTRUCTION OF INDEX NUMBERS

Number and Kinds of Commodities Once it has been decided what purpose the index is to serve it is necessary to determine just which prices shall be included and which shall be excluded. Obviously, it is impossible to include all the prices in the universe to be described. If, for example, we wish an index of wholesale prices, we cannot just go out and gather information on each and every wholesale price at a given point of time. In the first place it would be physically impossible to take such a complete census; in the second place the time involved in gathering and processing such a mass of data—even if it were available—would be long so that by the time the results were available they would be so out of date as to be useless. Thus, we are confronted with two choices. We may either try to obtain the most information for a specified cost, or for a given amount of information we may try to minimize the cost involved. In any event, our job is to obtain a sample of wholesale prices which when combined into an index will reflect the movements of the universe as a whole. Our sample must be representative of the whole universe. In the case of the revised Bureau of Labor Statistics' Index of Wholesale Prices some 2,000 individual price series are included. The Bureau's Consumer Price Index includes the prices of some 300 goods and services. In order that comparability of the indexes may be obtained, the commodities included in the index must be uniform over a period of time.

Sources of Data The problem of getting satisfactory data for successive periods on prices, profits, production, wages, etc., is a difficult

one. The usual sources are market quotations from trade journals, newspapers, produce exchanges, etc. Where prices are not available from such sources, it may be necessary to establish direct contacts with representative manufacturers, dealers, or traders.

Weighting A price index is an average and therefore if not consciously then unconsciously, the items comprising this average are weighted automatically. The problem of weighting is one of deciding how important each of the component parts is in relation to the whole. For example, in the construction of a retail price index we would not want to attach the same importance to a 10-percent rise in the price of a diamond tiara as we would to a 10-percent rise in the price of bread. Each item must be weighted in relation to its relative importance in the universe which we are considering in order that an accurate measure of price changes may be obtained. Weights may be determined by either the proportion of money expenditures on the item in question to total money expenditures on the items in the universe we are considering or on the volume of production, distribution, or consumption of the item in question to the total. Once determined, weights are left unchanged for long periods so that price changes may exert the chief influence on the index. When patterns of consumption or expenditure change to a considerable degree, then the weights must be adjusted to take account of this fact. It should be obvious that when the weights are changed, the new index is not exactly comparable with the old index number.

Base Period In selecting the base period there are several points to be kept in mind. In order to avoid bias, the period selected for the base should not be extreme. Since the base period is commonly thought of as being "normal," it would be unwise to pick a very prosperous year as a base period as this would tend to give the impression of chronic depression in subsequent periods where this conclusion might not be warranted. The base period should not be too far in the past since relative prices tend to change over time; the further back the base period the more likely it is that distortions in the index will appear in more recent periods. Often an average of prices over several consecutive years is used as a base. In this way abnormal values in one year may be to some extent flattened out. If it is desired to obtain year-to-year comparisons, a chain base system may be used. In this case each year is taken as the base for the year following. In some cases no base at all is used. The dollar amounts for a given "basket of goods" are merely stated for each period.

Construction The next problem is choosing a mathematical device with which to express changes which occur in the prices of those

commodities or items which we wish to include in our groups. Since we wish a single summary index figure, an averaging process is involved. There are numerous ways in which an average can be computed—and the task is to choose the most meaningful formula from among the various possible approaches. Five possible formulas will be discussed.

Simple aggregative index. This index is computed by merely adding together the prices of the commodities in the group. The resulting total is the index number. Utilized usually for comparative purposes, the total for any one year is divided by the total in a base year and multiplied by 100 to obtain a result in terms of percentages.

Let p_0 be the price of the 1st commodity in the base year.

Let p_0' be the price of the 2nd commodity in the base year, etc.

Let $p_1, p_1',$ be the price of the same commodities in a given year.

Then the simple aggregative price index may be expressed by:

$$\frac{p_1 + p_1' + p_1'' + \cdots + p_1^n}{p_0 + p_0' + p_0'' + \cdots + p_0^n} \quad \text{or} \quad \frac{\sum_0^n p_1}{\sum_0^n p_0}$$

Although it appears that we have an unweighted index, actually the results of using a simple aggregative index depend on the units, in which the prices of the commodities are expressed. A simple illustration will show how this works.

	1950	1951
Price of A	\$ 8 per lb.	\$12 per lb.
Price of B	6 per lb.	3 per lb.
Price level of both	\$14	\$15

If 1950 is taken as the base year, the index for 1951 is 107; in other words prices have risen. If we change this example and use the price of A in ounces we get:

	1950	1951
Price of A	\$.50 per oz.	\$.75 per oz.
Price of B	6.00 per lb.	3.00 per lb.
Price level of both	\$6.50	\$3.75

The index for 1951 is now 58; in other words prices have fallen. Thus the simple aggregative index is not an acceptable measure of price changes since the results depend on the units in which prices of items are expressed. A second flaw in the method is that no account is taken of the fact that some commodities are more important than

others and therefore need to be emphasized or weighted in the final answer.

Simple average of relatives index. If we divide the prices of each of the commodities in the base year by their corresponding prices in the given year and express these quotients in terms of percentages, then sum the resulting percentages and divide the sum by the number of commodities in the group, we have an arithmetic mean of relatives index. The advantage of this index over the preceding one is that it makes no difference what quantity units the prices refer to since we are dealing strictly in relative amounts. Unfortunately, however, we have not eliminated the weighting problem, for implicitly we have introduced a system of weights which depends on the quantity of each of the commodities that can be bought for the same amount of money in the base year. Again no account has been taken of the relative importance of each commodity in the group. The formula for this index may be expressed as follows:

$$\sum_0^n \left(\frac{p_1}{p_0} \right) / N$$

N = the number of commodities in the group.

Weighted aggregative index. How do we arrive at a system of rational weights? One way is to take account of the quantities of each commodity produced or marketed in a typical year. If we let $q_0, q_0', q_0'',$ etc., be these quantities, then the formula for this index may be expressed as follows:

$$\frac{p_1 q_0 + p_1' q_0' + \cdots + p_1^n q_0^n}{p_0 q_0 + p_0' q_0' + \cdots + p_0^n q_0^n} = \frac{\sum_0^n p_1 q_0}{\sum_0^n p_0 q_0}$$

$\sum_0^n p_1 q_0$ = the sum of the weighted prices in a given year.

$\sum_0^n p_0 q_0$ = the sum of the weighted prices in the base year.

It may be asked why we do not use current quantities (q_1) as the appropriate weights instead of those for the base year. In the first place, as previously mentioned, it is desirable to have weights relatively fixed over fairly long periods so that price changes may exert the chief influence on the index. Secondly, price quotations are readily available whereas up-to-date information on quantities marketed is not nearly as accessible and obtaining these data would involve substantial cost in terms of both time and money. In any event, quantities do not change rapidly so that over long periods in normal times the use of the q_0 's does not involve a great deal of

error. It is only when the q_0 series becomes significantly different from the current patterns of consumption that changes must be made.

Weighted average of relatives index. In this case, weights in terms of money expenditures are used. The formula for this index is as follows:

$$\frac{\frac{p_1}{p_0} p_0 q_0 + \frac{p_1'}{p_0'} p_0' q_0' + \cdots + \frac{p_1^n}{p_0^n} p_0^n q_0^n}{p_0 q_0 + p_0' q_0' + \cdots + p_0^n q_0^n} = \frac{\sum_0^n p_1 q_0}{\sum_0^n p_0 q_0}$$

Simplification of this formula gives us exactly the same result, it will be observed, as in the case of the weighted aggregative index. The only advantage of the present form lies in the fact that it permits easier observation of the component price series making up the index. The weighted aggregative index, on the other hand, is more easily understood and is much simpler to compute. For these reasons it is the weighted aggregative index that is most often used; the Bureau of Labor Statistics which compiles most of the important official price indexes in the United States utilizes the weighted aggregative index.

"Ideal" index. If theoretical accuracy is to be given priority over expediency and speed, even the use of current quantities would not be perfect. For since we are *comparing* one year with a past year neither past quantities nor present quantities are perfectly appro-

priate. In other words, neither $\frac{\sum_0^n p_1 q_0}{\sum_0^n p_0 q_0}$

(which would be the measure normally used), nor $\frac{\sum_0^n p_1 q_1}{\sum_0^n p_0 q_0}$

(which would be the measure if current weights are used), are ideal. The solution suggested by Irving Fisher,¹ after exhaustive tests of all possible formulas, is that both methods should be employed and the average of the two results used. Thus, we would have:²

$$\frac{\frac{\sum p_1 q_0 \sum p_1 q_1}{\sum p_0 q_0 \sum p_0 q_1}}{2} \quad \text{or} \quad \frac{\sum (q_0 q_1) p_1}{\sum (q_0 q_1) p_0}$$

¹ I. Fisher, *The Making of Index Numbers* (Boston, 1922), Chap. 4.

² Fisher proposes this as a more readily calculable substitute for the "ideal" formula given below.

if we take the arithmetic mean of both methods. Since, however, $\frac{\sum p_1 q_0}{\sum p_0 q_0}$ and $\frac{\sum p_1 q_1}{\sum p_0 q_1}$ are measures of percentage changes, their average value is best expressed not by an arithmetic but a geometric mean. The geometric mean is more satisfactory because it grants equal importance to equal percentage changes, while the former grants equal importance to equal absolute change. Using the geometric mean we would have:

$$\sqrt{\frac{\sum p_1 q_0}{\sum p_0 q_0} \times \frac{\sum p_1 q_1}{\sum p_0 q_1}}$$

Fisher chose this formula as the "ideal" index available. However, the computation difficulties are even greater than those mentioned in the preceding paragraph in connection with the problem of using current quantities and the "ideal" index is therefore rarely used in the construction of the majority of United States price index numbers.

SOME LEADING INDEX NUMBERS

The most important source of price indexes is the Bureau of Labor Statistics of the Department of Labor. In compiling its indexes the Bureau uses the weighted aggregative method with fixed weights taken from a representative base year or years in order to provide

$$\frac{\sum_0^n p_1 q_0}{\sum_0^n p_0 q_0}$$

The Bureau maintains two important series.

The Bureau issued a revised Wholesale Price Index in 1952. The revised index contains nearly 2,000 prices classified into 15 major groups, 88 subgroups, and approximately 250 product classes. The base period uses the average of prices in 1947-1949 as 100; quantity weighting factors represent sales at the primary market level during 1947.

The second index compiled by the Bureau is the Consumers' Price Index^a which has been published regularly since 1921. The method

^a The title, Consumers' Price Index for Moderate Income Families in Large Cities, was adopted in 1945. Previously this index had been precisely designated, Changes in the Cost of Goods and Services Purchased by Wage Earners and Lower-Salaried Clerical Workers in 1934-1936. In popular usage, this title was later shortened to Cost-of-Living Index. The latter designation gave rise to some misunderstanding of the scope of the series and, therefore, the current term, Consumers' Price Index, was introduced.

of construction is the same as is used in computing the Wholesale Price Index; the revised index includes prices of some 300 articles and services. The current base year for the index is the average of prices over the period 1947-1949; quantity-weighting factors are based on family expenditure patterns over the period 1950-1952.

Toward the end of World War II a great debate arose over the adequacy of the Consumers' Price Index in measuring the rise in the cost of living. Labor representatives on the Presidential Committee on the Cost of Living maintained that from early 1941 to the end of 1943 the cost of living had actually risen by 43 percent rather than the 23 percent shown by the index. Undoubtedly, the index did tend to underestimate the rise in the cost of living, but the order of the error was probably closer to 5 percent than to 20 percent.⁴

It is no doubt true that in times of rapid and drastic economic changes, index numbers do lose some of their significance. The Consumers' Price Index measured the value of a dollar's purchasing power for moderate-income families in large cities in a given year compared to the average purchasing power of the dollar in 1935-1939 with reference to a group of items of unvarying composition. Since the weights were based on the 1934-1936 pattern of family expenditures, the index does not take into account changes in the composition of consumer expenditures.

Labor's concern about the Consumers' Price Index did not end with the war. Labor unions in particular have become increasingly cognizant of adverse changes which rising prices bring about to the welfare of workers and now tend to use changes in the cost-of-living index as an argument in support of demands for wage increases. Beginning with the "Little Steel" formula in 1942, the policy of the War Labor Board was determined in part by changes in the cost of living. In May 1948 the famous General Motors labor contract tied wage rates among other things to changes in the cost of living. By 1952 over 3 million workers had contracts in which wages were tied to the Consumers' Price Index in one way or another.

After the outbreak of hostilities in Korea in June 1950, wage and price stabilization policies were designed to prevent excessive changes in the purchasing power of the dollar. In this effort, the Consumers' Price Index is widely used as a guide to general economic policy.

The widespread and increasing use of the index has made it almost a household word. Formulation, adjustments, weighting, and other

⁴ This was the conclusion reached by the technical committee of the American Statistical Association. "An Appraisal of the U. S. Bureau of Labor Statistics Cost-of-Living Index," *Journal of the American Statistical Association* (December 1948).

matters involved in its presentation have become of increasing public importance. In the light of these circumstances a major overhaul of the Consumers' Price Index was undertaken by the Bureau of Labor Statistics.

The revised Consumer Price Index was introduced early in 1953 and was spliced on to the preceding index to provide continuity in the series. The revised index will be shown on a new base of 1947-1949 = 100. The number of items priced for the new series was increased and included previously unpriced items thus reflecting new products on the market which have become important in consumer expenditures. The importance of each of the items which goes into the index (the weights assigned to each item) is based on the pattern of consumption expenditures in 1950 adjusted to reflect major changes in buying habits up to 1952. The list of cities in which prices are collected for the new index is representative of all urban places ranging in size from New York City down to towns of 2,500 population.

Construction and formulation of index numbers are now reasonably satisfactory. However, their interpretation is still a matter where great caution needs to be displayed. Like most statistics, index numbers have been and still are the subject of misinterpretation and outright wrong inferences. The user should be certain that he understands index numbers, their strengths, and their weaknesses, what they do measure, and what they do not measure before he attempts to draw inferences and determine policy.

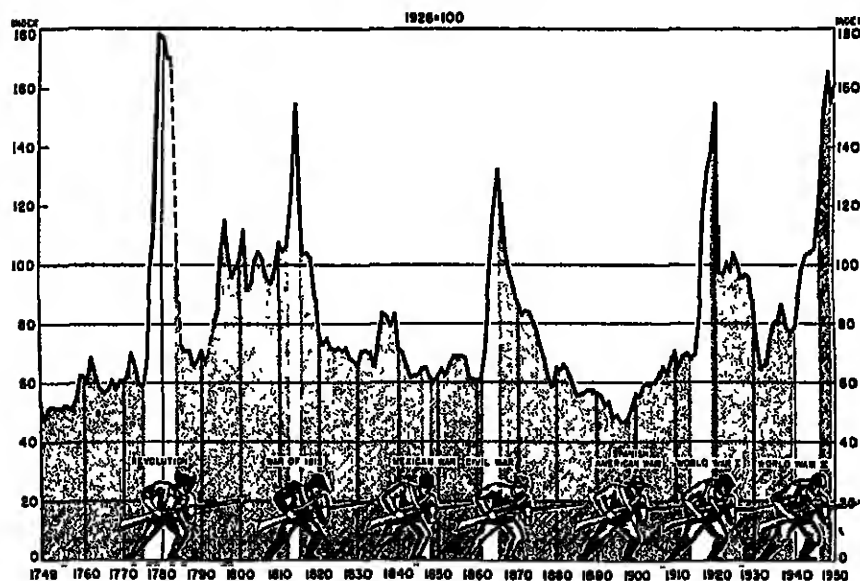
■ CHANGES IN NATIONAL INCOME

In a preceding section we examined the reasons why stability of the general price level was one of the critical goals of monetary management. Until the last few decades the goal of stability of the general price level was considered to be the paramount problem facing monetary policy. Gradually, however, other goals have been added to the list. It is probably correct to assert that the foremost objective of monetary policy today is the attainment of continuous high levels of employment of resources and maximization of the national income. Since the end of the war the objectives of stability of the general price level and high and stable levels of employment and income have been fused as a set of related goals.

The reasons for the change from preoccupation with a stable price level to that of attaining continuous high levels of employment and income lie partly in historical facts and partly in the nature of our theorizing on monetary matters.

The problem of unemployment had not been as serious in the past as it has been in more recent decades. On the other hand, changes in the value of money played an important role throughout the nineteenth century and there is hardly a single nation which did not suffer the serious maleffects of drastic changes in the price level. As is shown in Figure 27, the United States experienced

FIGURE 27
WHOLESALE PRICES



SOURCE: Department of Labor, Bureau of the Labor Statistics

extremely wide variations in the course of wholesale prices since 1749. Comparable data for Western European countries would display a similar pattern of behavior of the general price level over the same period.

It is understandable therefore why the problem of stabilization of the price level was granted such a prominent place in matters of policy. In addition to historical factors, however, it is now clear that economic thinking in the past developed along lines which had tended to disregard the problem of unemployment. Monetary theory which centered its attention on short-run practical problems of policy did not concern itself with questions of employment at all but left these matters to the economic theorists. The economic theorists in turn were mainly concerned with "long-run" analysis and tended to treat

lapses from full employment (when they did occur) as essentially transitional effects which would be cured "automatically" through the mechanism of the price system. The reasoning behind this conclusion was itself dependent on the assumption that all prices—including the price of labor (wages) and the price of capital (interest)—were perfectly flexible. Unemployment of resources was, therefore, not so much a long-run problem as evidence that certain factors were "overpriced"—a symptom which would be cured just as soon as market forces pushed prices of the factors of production back into line once again.

The depression of the 1930's, however, focused attention on the problem of unemployment as a high priority concern. There was a situation in which unemployment had become more than just a short-run consideration. Economic thinking underwent considerable reorganization in the attempt to understand a world which did not quite conform to the sort of behavior history had led people to expect. This reorganization involved a change in emphasis from the long-run analysis to the problem of the short-run and a re-examination of basic assumptions of economic theory. It also called for an extension of existing monetary analysis so as to provide an explanation not only for the relation between money and the general level of prices but also for the relation between money and the level of employment. The scourge of unemployment increasingly came to be regarded as a far greater evil than anything which free-enterprise economies had had to face before, and all available means (including monetary policy) were directed toward its cure and toward achieving the goal of high and stable levels of employment. The development of the new ideas led to the development of new concepts, particularly the concepts of "national income" and allied magnitudes.

NATIONAL INCOME STATISTICS

The subject of national income accounting and its rapid development during the last fifteen years is too vast for detailed treatment in the present volume. We do, however, need to know what the various concepts mean. National income statistics are aggregate measures expressed in terms of the unit of account of the output of the economy for a specified period of time. Thus, we define the national product of a given period as the money value of all economic goods and services produced in that year. We can measure national production in three ways: (1) by totaling the value of all production, (2) by totaling expenditure for production, and (3) by

totaling incomes created in production. If our figures are accurate and complete, the results should be the same no matter which approach we use. Thus, if a cabinet maker produces \$100 in cabinets, production in the form of furniture of the value of \$100 takes place, \$100 is spent for current production, and the cabinet maker receives an income of \$100.

The term national income statistics is somewhat vague; in fact, there are literally a countless number of facts and figures that can be assembled, all relating to what is happening or has been happening in the economy. In this section we shall deal primarily with the five most commonly met and used variants of national income. These are as follows:

1. Gross national product or expenditure.
2. Net national product.
3. National income at factor cost.
4. Personal income.
5. Disposable income.

These statistics are aggregate values because they attempt to sum up in reasonably intelligible and concise terms the value of total income and product for the whole economy. This procedure may be contrasted with the case of one firm in which the accountants bring together all the operations over a period of time and attempt to sum up just how much the firm has produced, how much it has paid out, and how much it has earned for its stockholders. In broad terms, we are doing essentially the same thing for all the firms together as the accountant does for the single firm. We are, in effect, attempting to carry out a job of national economic accounting.

The myriad of transactions which combine to make up the nation's production present a fantastically complicated and seemingly systemless conglomeration. It is the job of national economic accounting to reduce the records of these transactions to a relatively simple, rational, and understandable pattern in order that a useful and comprehensible view of the economy may be obtained. The best method of calculating the value of national production is to tabulate the receipts and expenditures of the sectors of the economy.

First, the economy is divided into four sectors. These are: (1) consumers, (2) business, (3) government, and (4) the rest of the world. Second, a national income and product account is set up. On one side are grouped all sums which are paid out or saved as a result of producing current output. On the other side we show the value of all the products and services produced by the economy during the period in question as evidenced by purchases made by

the four major sectors. The total obtained in this account measures total national output shown as the sum of the contributions from each of the four sectors. Third, it is then possible to break up the national income and product account into separate income and product accounts for each of the four sectors of the economy and to investigate the interrelationships which exist between the sectors.

In our exposition we shall be mainly concerned with the national income and product account and the national output statistics obtained from it.

GROSS NATIONAL PRODUCT OR EXPENDITURE

Gross National Product or Expenditure (GNP) may be defined as the market value of the goods and services produced by an economy before the deduction of depreciation charges and other allowances for the consumption of capital resulting from the production of these goods.

If we view the economy as being made up of one gigantic firm, then the GNP for a specific period would be the total sales of this firm adjusted by adding or subtracting the change in its inventory, valued at cost, depending on whether the inventory had been increased or reduced. However, since the economy does not consist of one firm, the problem becomes more difficult. Since we are only interested in the total final output, we cannot aggregate the sales receipts for all the firms in the economy, for this would involve a great deal of double counting. For example, the coal sold to an electric-generating company could not be included since the electricity is the final product used by households. In a similar way the tires which come with a new automobile would enter our aggregate only as a part of the final sale price of the automobile. But, on the other hand, when tires are sold, say, as replacements for those worn out, then their market value would be included in our total. Thus, we can see that our problem is one of ascertaining how we can most easily and accurately obtain the actual statistical compilation of the total final output.

Once again we may return to the case of the single firm for illustrative purposes. We can measure the output of the firm either through the flow of products which the firm sells or through the incomes which are paid both to the various factors of production and to nonfactor recipients during the course of operations. Thus, there are two general approaches available for the measurement of national output. We may either sum the market values of goods and services produced, or we may sum income flows.

Product Values Let us first tackle the problem by way of the product values, or as it is also known, from the sources side of the national income and product account. Expanding from the firm to the economy as a whole, we can note that the value of the final product at market prices will be equal to the total sales of the various producing units, plus or minus an inventory correction, and minus some factor which will eliminate the double counting mentioned previously.

First, it is convenient to divide total sales into the four following categories:

1. Sales to consumers.
2. Sales to government (federal, state, and local).
3. Sales to abroad.
4. Sales to business firms.

This is an exhaustive classification.

Next, we must subtract from the sum of the four items above the total value of all goods and services bought to be used in current production. This is our correction item for double counting to derive final products. The source of these goods purchased by business firms is either domestic or foreign. Therefore, our correction can be split up into two components:

1. Goods and materials purchased domestically for current production
- plus
2. Goods and materials purchased abroad for use in current production.

Net foreign investment. The item, sales to abroad, minus the item goods and materials purchased abroad for use in current production leaves us with net sales to abroad. If net sales to foreigners is adjusted to include net gifts to abroad, the resulting figure is net foreign investment in the United States or simply net foreign investment.⁸ A negative figure for net foreign investment means that the United States owes foreigners more for goods and services and gifts than foreigners owe to the United States for these items.

Gross private domestic investment. In order to arrive at a figure of sales which excludes double counting, we subtract from sales to business firms the amount of goods and services purchased domes-

⁸ In other words, net foreign investment may be defined as the value of exports of goods and services from the United States plus money gifts from foreigners minus the value of imports of goods and services into the United States plus money gifts to foreigners.

tically which are used in current production. The resulting figure represents a part of the GNP which business firms themselves will hold or use. Such goods will replace or add to the stock of real capital used by business. The sales to business on capital account plus changes in business inventories are described as gross private capital formation or private investment. The major categories into which gross private capital formation or business expenditures on current output are divided are:

1. New construction.
 - a. Residential building.
 - b. Nonresidential building.
2. Producers' durable equipment.
3. Net changes in business inventory.

Personal consumption expenditures. In peacetime consumers take by far the largest fraction of the current flow of newly produced goods and services. The sales to consumers are obviously the same thing as purchases by consumers and this we shall call personal consumption expenditures. Consumer expenditures are classified into the following categories:

1. Durable goods.
2. Nondurable goods.
3. Services.

Government purchases of goods and services. Sales to government—consisting of federal, state and local units—are called government purchases of goods and services. Government purchases are essentially of two types. In the first place, governmental units buy newly produced goods from private business. In the second place, governments pay incomes directly to the factors of production (mainly salaries and wages to employees) in exchange for services which are passed on to the consumers in the form of police and fire protection, national defense, education, etc. Since these services are not sold they cannot be recorded at market prices as purchases by private groups. Thus, these services are included in the GNP as output by the government valued at cost to government.

Using the terminology elaborated in the four sectors above, our formulation of GNP will appear as shown in Table 46. This is the terminology which the Department of Commerce uses in presenting its estimates of GNP.

Income Flows Let us now turn to the alternative method of arriving at Gross National Product—namely, that of summing income flows. In the case of our single firm, sales receipts are paid out in

TABLE 46

GROSS NATIONAL PRODUCT OR EXPENDITURE, 1951
(In billions of dollars)

Personal consumption expenditures	\$208.0
Gross private domestic investment	58.5
Net foreign investment	.2
Government purchases of goods and services	62.5
Gross National Product	\$329.2

various forms or else saved. The receipts will be allocated partly to pay for goods bought from other firms, partly as wages and salaries, partly for depreciation, taxes, interest, and so on. However, since we are interested in the value of the output (final product) contributed by our firm, we shall not include the portion of total sales which is paid out for goods bought by the firm from others and used up in the production of final products. This is equivalent to the adjustments made for total sales when we derived the GNP from the product flow or sources viewpoint.

In brief, what we are searching for is, in effect, an income or operating statement for the economy as a whole. Indeed, our operating statement for the economy as a whole will be similar to that for the single firm, except for some new categories which will appear and somewhat different terminology. What we want to do is to break down the income received as a result of the period's production and discover in what manner it was spent or allocated. As we shall see shortly, national income measures the returns paid to the factors of production in turning out current output. Therefore, national income measures current output valued at factor cost. But GNP represents current output valued at market price. Thus, in summing the income flows to derive the GNP we must add to the incomes paid to the factors of production other nonfactor incomes which are included in the sales price of final products.

Thus depending upon which side of the coin we look at, we are setting up either the allocations of GNP or the various incomes paid out of GNP to both the factors of production and nonfactor recipients. The important point is to remember that it is the *same* coin.

Employee compensation. The most obvious portion of factor income is that which includes wages and salaries, and supplements. Wages and salaries embrace payments in kind as well as money income. (It should be noted for future reference that employee con-

tributions to social insurance are covered in this item.) Supplements include employer contributions to social insurance and the catch-all item "other labor income."

Income of unincorporated enterprises and inventory valuation adjustment. This category consists of the income, monetary and in kind, of sole proprietorships, partnerships, and producers cooperatives. Not included is personal income received from rental of property. Any increase in inventories, of course, is a part of production; any decrease means that more has been sold than has been produced. Hence, any measure of national production (or income) must include an allowance for the net *change* in inventories in the period considered. Inasmuch as income is computed inclusive of profit or loss in inventory and for purposes of national product, we are interested only in the value of real changes in the value of inventory, the inventory valuation adjustment is designed to eliminate from corporate profits and the income of unincorporated enterprises an element which is very similar to capital gain and loss.

Rental income of persons. This is the net rental income of individuals not primarily engaged in the real estate business.

Corporate profits and inventory valuation adjustment. Corporate profits before tax are arrived at by summing the following items: Corporate tax liability, which is the federal and state taxes that corporations pay on their earnings, dividends (which are net of intercorporate dividends) and undistributed profits. It should be noted that corporate profits before tax are exclusive of depletion and depreciation charges and also of capital gain or losses. Capital consumption is treated separately for national product purposes. The inventory valuation adjustment is of the same nature as that made for unincorporated enterprises.

Net interest. This is total interest, both monetary and imputed, paid to individuals and governments less all interest paid by governments. Interest paid by governments is deducted since the Department of Commerce considers that the interest paid by the government does not measure a part of national production in the same way that interest on loans to persons or business is taken to measure a service rendered. Imputed interest may best be explained by means of an example. Most of the imputed interest arises in connection with commercial banking and may be defined for this case as the excess of interest and dividends earned over that paid out as monetary interest on demand and time deposits.

Since GNP represents the price paid for current output by consumers and other final purchasers, we must add to factor income

other incomes paid to nonfactors which are included in the price of final output. Nonfactor charges include the following:

Indirect business tax and nontax liability. The indirect business taxes—chiefly federal and state sales and excise taxes and property taxes—incurred by the business community (other than income taxes) are included in the price paid for current output. Nontax liabilities include payment for services within the sphere of government activities; however, purchases from government enterprises such as power purchased from TVA are not included. Thus, the payments included in this category may be looked upon as payments for government services by business, such services being included in the prices of final product sold by business.

Business transfer payments. Payments made by business firms to nonprofit institutions such as hospitals, charities, etc., in the form of gifts as well as individual's bad debts to them do not represent the purchase of productive services, hence are not part of payments to factors of production. Yet these payments are included in the sale price of final purchases of current production.

Statistical discrepancy. The adjustment made to the estimate of GNP arrived at by using the allocations or income method to bring it into conformity with the estimate arrived at by using the sources or expenditure approach is called the statistical discrepancy.

Current surplus minus subsidies of government enterprises. Government-owned enterprises do not pay indirect taxes on their products, but if they have a surplus accruing to government, this should enter the account just like an indirect tax. If there is a loss subsidized by government, this counts like a negative indirect tax and should be subtracted from the total.

Capital consumption allowances. This item consists largely of charges for depreciation to fixed capital by business firms. Also included are charges for obsolescence and accidental damages to fixed capital. Charges for depletion are excluded. As we produce new output, a part of the nation's capital equipment is used up in the process. To this extent new output does not represent income but is necessary to replace capital goods consumed in the production process. This item must be included in the GNP since it is included in the total expenditures made by final users in buying a nation's current output.

We are now able to derive our measure of GNP both from the product and income points of view. The 1951 Gross National Product or Expenditure estimates for the United States, as compiled by the Department of Commerce, are shown in Table 47.

TABLE 47

NATIONAL INCOME AND PRODUCT ACCOUNT, 1951

(In billions of dollars)

Compensation of employees	\$178.8	Personal consumption expenditures	\$208.0
Income of unincorporated enterprises and inventory valuation adjustment	41.8	Gross private domestic investment	58.5
Rental income of persons	8.9	Net foreign investment	.2
Corporate profits and inventory valuation adjustment	41.6	Government purchases of goods and services	62.5
Net interest	6.4		
Indirect business tax and non-tax liability	25.4		
Business transfer payments	.8		
Statistical discrepancy	1.4		
Plus: Current surplus of government enterprises minus subsidies	— .5		
Capital consumption allowances	24.6		
Charges against Gross National Product	<u>\$329.2</u>	Gross National Product	<u>\$329.2</u>

SOURCE: Department of Commerce, *Survey of Current Business* (July 1952). ***NET NATIONAL PRODUCT**

Gross National Product does not give us a measure of the net output of the economy for the period in which we are interested. In computing GNP, it will be remembered, we specifically included charges for depreciation and obsolescence. Thus, no account was taken of the wear and tear on the fixed capital of the economy in producing the national output. In order to obtain a measure of net economic gain achieved by the economy, the capital consumption allowances item should properly be subtracted from GNP. The resultant figure measures the net production of the economy expressed in market prices of the products sold.

Net National Product = Gross National Product

— Capital Consumption Allowances

NATIONAL INCOME AT FACTOR COST

In the discussion thus far, our two measures of national output have been couched in terms of the market value of the goods and services produced by the economy. We saw that we could derive these measures from two points of view—from product or expenditure flows or from allocations or income flows. In the latter case it will be remembered that our measures were made up of items some of which could be considered as factor payments and some of which were nonfactor payments. We now wish to obtain a measure of national output in terms of factor payments. We wish to determine what payments were made to the factors of production in the process of turning out the current volume of goods and services. Again it is obvious that these factor payments can be looked at from two points of view. On the one hand, total factor payments can be considered as the aggregate of all earnings of labor and property. This is the income point of view. On the other hand, the income of the payee is a cost to the payor; therefore, we may also look at the factor costs. Net national product valued at factor cost we call national income. National income may also be defined as the total income of the factors of production. To derive the figure for national income it is necessary to deduct those items in our determination of GNP which are not true factor payments.

First, we must deduct the item indirect business tax and nontax liability (which as we saw includes such items as sales and excise taxes) since this is a payment required by law rather than a cost of employing a specific factor of production. On the other hand, it should be noted that employer social insurance contributions are not deducted since they are incurred as a result of hiring labor. Second, we must deduct business transfer payments since they, also, do not represent payments to factors of production. Third, the item statistical discrepancy certainly cannot be considered as a factor payment since it is merely a reconciliation item arbitrarily assigned to the allocations determination of GNP in order to balance GNP obtained in this way with the GNP obtained from the determination of total expenditures. Fourth, current surplus minus subsidies of government enterprise instead of being added as in the case of GNP and NNP should be subtracted in order to compute national income. Surpluses cannot be regarded as payments to the factors of production whereas subsidies actually are payments to the factors of production.

All other items in our determination of net national product are factor payments and remain in the estimate of national income.

Thus:

National Income = Net National Product

$$- \left[\begin{array}{l} \text{Indirect Business Tax and Non-} \\ \text{tax Liability} \\ \text{Business Transfer Payments} \\ \text{Statistical Discrepancy} \\ \text{Current Surplus of Government} \\ \text{Enterprises minus Subsidies} \end{array} \right]$$

PERSONAL INCOME

We defined national income as the income (before income taxes) earned by the factors of production in producing net additions to the goods and services of a country in a stated period. National income is not, however, the sum that individuals actually receive in a given period. Personal income represents the money income or its equivalent received by persons in the time period concerned. Thus, it is not a measure of production but represents income which is available for spending.

In order to derive the figure of personal income, we must subtract certain items which are a part of income created (payments to the factors of production) but are not paid to the factors during the period under consideration. Furthermore, we must add to national income certain items which do not represent payments for productive services rendered but which do represent income available to persons for spending.

The deductions from national income consist of that part of employee compensation which is not distributed to individuals and all the elements of the corporate profits and inventory valuation except dividends.

Contributions to social insurance funds are costs of hiring factors of production; these payments are siphoned off before payments to persons are made and are not available as personal income to be spent. The excess of wage accruals over disbursements represent payments to factors which are not disbursed in the period under consideration and are not, therefore, a part of personal income. Since corporate profits are reported inclusive of inventory profits and losses, it is necessary to utilize the inventory valuation adjustment in order to derive a corporate profit figure which is a measure of payments to the factors for current production. A part of the income created in the economy is drawn off by federal and state governments as income and excess-profits taxes on corporations and so does not

become income payments to persons. As was noted earlier, corporate profits represent a part of income created; the portion of corporate profits which is retained by the enterprise is not passed on to the factors of production, hence, is not a part of personal income.

The additions to national income necessary to derive a figure for personal income received consist of incomes received by persons which are not earned in current production. Transfer payments from government (old-age and survivors' insurance benefits, unemployment insurance, railroad retirement payments, pensions, direct relief, veterans' allowances and benefits, etc.) for which no productive service is rendered in return are not a part of national income but are part of personal income. Similarly, transfer payments from business (gifts, grants, prizes, bad debts, etc.) are part of personal income but not of national income. Net interest paid by government (excess of total government interest payments over interest receipts) is a special form of transfer payment; it, too, is not a part of current production (national income), but it does represent income received by persons.

By way of summary, personal income includes those factor payments actually received by individuals, excludes factor payments not received by individuals, and finally includes some payments of a nonfactor variety.

Thus:

Personal Income = National Income

$$\begin{array}{r}
 \left[\begin{array}{l} \text{Undistributed Corporate Profits} \\ \text{Corporate Profits Tax Liability} \\ \text{Corporate Inventory Valuation Adjustment} \\ \text{Contributions for Social Insurance} \\ \text{Excess of Wage Accruals over Disbursements} \end{array} \right] \\
 - \\
 \left[\begin{array}{l} \text{Net Interest Paid by Government} \\ \text{Government Transfer Payments} \\ \text{Business Transfer Payments} \end{array} \right] \\
 +
 \end{array}$$

We arrived at the above determination of personal income by means of adjustments to national income, but alternatively we could draw up a personal income account for all persons in the economy. On one side we could group those things on which individuals' income is spent, and on the other side the sources of this income. On the expenditures or allocations side the items can be divided into three main categories: (1) tax and nontax payments to government, (2) personal consumption expenditures, and (3) personal saving. On the sources side, the items reflect the nature of the income

TABLE 48

PERSONAL INCOME AND EXPENDITURE ACCOUNT, 1951

(In billions of dollars)

Personal consumption expenditures	\$208.0	Wage and salary receipts	\$166.6
Personal tax and nontax payments	29.1	Other labor income	4.2
Personal saving	17.0	Proprietors' and rental income	50.7
		Dividends	9.0
		Personal interest income	11.3
		Transfer payments	12.3
Personal Outlay and Saving	<u>\$254.1</u>	Personal Income	<u>\$254.1</u>

SOURCE: Department of Commerce, *Survey of Current Business* (July 1952).

received. Table 48 presents personal income for 1951 classified from the sources and uses of this income.

DISPOSABLE INCOME

Disposable income represents personal income which individuals are free to spend or save as they see fit. People are not free to "dispose" of their income until they have paid over to federal, state, and local governments their personal income taxes and other direct taxes as well as fees levied on persons. We can derive disposable income by subtracting the item personal tax and nontax payments to government from personal income. Thus:

$$\text{Disposable Income} = \text{Personal Income} - \text{Personal Tax and Nontax Payments}$$

In order that we may consolidate the interrelationships that exist between the various measures of economic activity that we have derived, we show in Table 49 the necessary adjustments which are made, starting with gross national product as given, to arrive at net national product, national income, personal income, and disposable income, for the year 1951.

GNP IN CONSTANT PRICES

One of the inadequacies of national income statistics has been that estimates have been stated solely in terms of current prices. This is not serious when prices are relatively stable, but in

TABLE 49

RELATION OF GROSS NATIONAL PRODUCT AND OTHER NATIONAL
INCOME STATISTICS, 1951

(In billions of dollars)

Gross National Product		\$329.2
less: Capital consumption allowances	\$24.6	
equals: Net National Product		304.6
less: Current surplus of government enterprises minus subsidies	— .4	
Indirect business tax and nontax liability	25.8	
Business transfer payments	.8	
Statistical discrepancy	1.4	
equals: National Income		277.5
less: Undistributed corporate profits	9.6	
Corporate profits tax liability	24.2	
Corporate inventory valuation adjustment	— 1.3	
Contributions for social insurance	8.1	
Excess of wage accruals over disbursements	.0	
plus: Net interest paid by government	4.9	
Government transfer payments	11.5	
Business transfer payments	.8	
equals: Personal Income		254.1
less: Personal tax and nontax payments	29.1	
equals: Disposable Income		225.0

SOURCE: Department of Commerce, *Survey of Current Business* (July 1952).

times of changing prices it is necessary, for many purposes, to separate changes in national output which result from changes in the price level from real changes in output. In the analysis of real production and inflation in the system the availability of deflated statistics to be used in conjunction with those stated in current dollars assumes great importance.

In 1951 the Department of Commerce first published figures on GNP in constant dollars for the United States. The work published so far (1952) is of an interim nature and undoubtedly many refinements and improvements will be incorporated in the final study so that results at this time should be regarded as tentative. Nevertheless, the importance of this type of data justifies the inclusion of current estimates at this time. In Table 50 estimates of GNP are expressed in dollars of constant (1939) purchasing power.

TABLE 50
GROSS NATIONAL PRODUCT OR EXPENDITURE IN CONSTANT DOLLARS,
1929-1951
(Billions of 1939 dollars)

	1929	1930	1931	1932	1933	1934	1935	1936	1937	1938	1939	1940
Gross National Product	\$85.9	\$78.1	\$72.3	\$61.9	\$61.5	\$67.9	\$73.9	\$83.9	\$87.9	\$84.0	\$91.3	\$100.0
Personal consumption expenditures	\$62.2	\$58.6	\$56.6	\$51.8	\$51.1	\$54.0	\$57.2	\$62.8	\$65.0	\$63.9	\$67.5	\$71.3
Gross private domestic investment	14.9	10.1	5.9	1.1	1.6	3.5	6.7	9.3	11.4	6.3	9.9	13.7
Net foreign investment	.8	.6	.3	.2	.1	.3	-.1	-.2	.1	1.0	.9	1.2
Government purchases of goods and services	7.9	8.7	9.4	8.9	8.7	10.1	10.1	11.9	11.4	12.7	13.1	13.8
	1941	1942	1943	1944	1945	1946	1947	1948	1949	1950	1951	
Gross National Product	\$115.5	\$129.7	\$145.7	\$156.9	\$153.4	\$138.4	\$138.6	\$143.5	\$144.0	\$154.8	\$167.3	
Personal consumption expenditures	\$76.6	\$75.8	\$78.0	\$81.1	\$86.3	\$95.7	\$98.3	\$100.3	\$103.2	\$108.5	\$108.4	
Gross private domestic investment	17.1	9.3	5.4	6.6	8.3	20.3	19.3	22.7	18.0	25.8	28.0	
Net foreign investment	.7	-.4	-2.1	-2.2	-1.8	2.7	4.8	1.4	.6	.0	2.0	
Government purchases of goods and services	21.1	45.0	64.3	71.3	60.6	19.6	16.1	19.2	22.2	20.6	28.9	

SOURCE: *Survey of Current Business* (July 1952).

USES OF NATIONAL INCOME STATISTICS

No one of the measures of national output should be considered better than another. One measure may be more useful than another for a given purpose, but this does not imply any concept of general superiority. Even in considering any one purpose there is sometimes disagreement among various authorities as to the relative usefulness of the statistics. For example, is the Gross National Product concept, as we have defined it, a better indicator of economic activity than national income? Maybe net national product is better than either, or again maybe a measure of GNP at factor cost rather than at market prices would be best. Possibly no definitive answer can be given.

The five concepts—gross national product, net national product, national income, personal income, and disposable income—are useful measures of economic activity and the potential spending power to which that activity gives rise. Fluctuations in these magnitudes are an important indication of how fully the community as a whole is using its productive resources. It must be realized that the measures of national output given in this section are aggregates. Of and for themselves, they are of little use. It is rather because they provide a framework for analyzing the workings of the economy that they are useful. It is not the broad totals on which the emphasis should be placed, but rather on the various component parts as related to the whole.

The significance of each of the various "measures" of how well or badly an economy is functioning can best be illustrated by examining the relationship which exists among them. Employment statistics tell us how much of the labor force is actively employed. Figures for physical output expressed in the form of an index demonstrate how effectively or fully all productive capacity is employed. But there is no easy way in which to measure physical output directly. The GNP as a value aggregate of all physical output is the most likely approach to the problem. This measure, however, includes a price factor. It is quite possible for the dollar value of physical output to rise while actual physical output is constant, merely because prices rise. To obtain a picture of real changes in physical productivity, we need to deflate the GNP figure by the amount of the price rise. It is clear, therefore, that no single measure of economic activity is by itself adequate: all the elements—employment, price, output, gross national product, national income, etc.—are needed if the economic behavior of society is to be analyzed.

■ INFLATION AND DEFLATION

The newer measures of economic activity go hand in hand with the newer goals which are now being aimed at. These can be stated quite simply: As high and as stable a level of employment, output, and national income as is possible in conjunction with a stable level of prices. The problem for the monetary theorist is to inquire why and how monetary changes influence changes in the above magnitudes and to suggest monetary measures which will lead to the desired goals. In the majority of cases all these goals call for a common monetary policy. There can be instances in which the goals conflict. It is in these areas that the problems of the monetary authorities become difficult. A more careful examination of the nature of such problems will be made in the later sections of this book which are concerned with monetary and fiscal policies. We do need, however, to analyze the problem on a general plane if we are to understand the nature of the issues at stake.

In the older monetary literature inflation and deflation referred to parallel movements of both prices and the stock of money. Increases in the quantity of money accompanied price increases, and decreases in the stock of money accompanied falling prices. The newer emphasis upon stability of economic activity at high levels of employment and income has led monetary theory to shift its emphasis away from price levels and away from the more rigid versions of the quantity theory of money. Contemporary monetary discussion characterizes inflation as a situation in which the aggregate demand for goods and services exceeds the aggregate supply of these goods and services at the existing level of prices. Contrariwise, deflation may be said to exist when aggregate demand for goods and services is less than the aggregate supply at the existing price level.

Availability of national income data clearly show that the manifestations which we have called inflation and deflation present neither simple nor symmetrical problems. While variations in aggregate demand bear some relation to variations in the general price level, the relationship is not direct. There are a variety of cases which can best be classified on the basis of whether or not "full employment" exists. Under conditions of unemployment and unused resources increases in aggregate demand may largely affect output with little effect on prices; under conditions of full employment increases in aggregate demand will be reflected in a general rise in prices. While inflation may be characterized by increases in prices,

deflation may lead to downward movements of production and employment with relatively little effect upon the general price level.

Let us first take the problem of a contraction in economic activity as evidenced by a fall in the national product. The measurable decline is the result of both a fall in the price level and a fall in the degree of employment of resources. In some sections (particularly farming) the important force is the fall in prices. In other sectors (particularly in manufacturing) prices may fall only slowly while the important shrinkage takes place in production and employment. For the economy as a whole employment may fall rapidly with only a slow fall in prices, or it may be the other way around.

An expansion of economic activity falls into two broad categories. Expansion up to the point of full employment of resources can take place entirely in increases of production and employment with no accompanying price rises. In other words, expansion of activity may not be accompanied by inflationary symptoms. However, the use of aggregates may be misleading. In periods of inflationary pressures the economy may suffer from bottlenecks in steel and transportation and from serious shortages of certain raw materials and foods. The price effects begin when inflationary forces run into these bottlenecks. Thus, we may very well find price increases in some segments of the economy at the same time as other segments are still only partially employed or even in a very depressed condition. As more and more segments of the economy begin to reach full capacity, expansion of physical production and employment becomes more and more difficult; the continuance of expansionary forces at this stage leads primarily to price increases with less than proportional accompanying production increases. Such a situation can be called "inflationary" only if we define inflation as an increase in the value of the national product which is not accompanied by proportional increases in physical production. On the other hand, we may reserve the term inflation as "true inflation" to a situation in which all sectors are fully employed and in which expansionary forces succeed only in driving prices upward with virtually no change in physical output.

The important difficulties of implementing monetary policy occur chiefly during periods of full employment, for it is during such periods that the economy is sensitive to the slightest changes in the economic conjuncture. If we examine various broad situations in turn, the strategic nature of the last-named case will become more apparent. During a period of severe unemployment of resources the aim of monetary policy is a fairly clear one, namely, to provide expansionary forces. If by doing so inflationary situations are brought

about in particular segments of the economy, these distortions are considered a small price to pay for achieving a reasonable level of employment and output for the economy as a whole. At the other end of the scale, if full employment exists and expansionary forces are afoot causing a true inflation, the immediate aim of monetary policy is equally clear—namely, to encourage contractionary forces. If by doing so, particular segments of the economy suffer from declines in production, this is once again considered a small price to be paid for preventing a runaway inflation and the collapse which such a runaway inflation may cause.

The intermediate cases, however, where full or near full employment exists, call for much finer judgment on the part of the monetary authorities. A slight pressure upward may result in inflation while a slight pressure downward may result in a contractionary spiral. A continuous watch becomes necessary to see that the equilibrium is not upset and to take opposite action when expansionary or contractionary movements become evident. On the other hand, there is always the danger that a corrective attempt coupled with a quick change in business forces may steer the economy in the wrong direction and hence on to either the Scylla of inflation or the Charybdis of recession. *It is in such situations that some choice has to be made with regard to the goals themselves and some answer attempted to the question of price levels versus employment.* Those groups who fear unemployment more than they do a rise in prices will advise that the monetary authorities play safe as far as employment is concerned and face the risk of rising prices. On the other hand, those groups who feel that price rises and the distortion which they bring are the prime cause of economic maladjustment will advise that the monetary authorities play safe as far as preventing inflation is concerned and risk the danger of a recession in employment and activity. While there is no easy solution to these problems, the final answer must lie in improving our understanding of how and why monetary forces cause and/or accentuate the behavior of various segments of the economy and to what extent the effect of monetary causes can be predictably measured. It is with these problems that the next few chapters will be concerned.

■ APPROACHES TO MONETARY THEORY

Our understanding of the relationship between monetary forces on the one hand and economic activity on the other has undergone a continuous evolution. The development reflects the emergence of new problems, new emphasis on old problems, and

the changing goals which accompanied this emergence. Although no clear-cut divisions are possible, it will be convenient to divide the body of thinking on this subject into three main groups and to treat each of these in a separate chapter. While this treatment will correspond broadly with the chronological development of monetary theory it must be remembered that there exists a great overlapping of ideas.

The classifications which we intend to make are as follows:

1. Theory of the long-run value of money.
 - a. Commodity approach.
 - b. Quantity theory.
2. Theory of short-run changes in the price level.
3. Theory of income and employment determination.

The earlier theories of money were concerned in the main with the problem of how the long-run value of money is determined and hence confined themselves to the equilibrium relations between the money stock and the general level of prices. These theories are examined in the first of our four succeeding chapters.

From these theories emerged a number of short-run dynamic theories which were concerned not with long-run equilibrium as such but with the way in which changes in the money stock influenced cyclical fluctuations of economic activity. The common point of all these theories was their emphasis on the fact that changes in the monetary stock affected economic activity through a primary effect on the level of interest rates. These theories are examined in the second of our following chapters.

The third and fourth chapters trace the important innovations introduced mainly by the publication in 1936 of the late Lord Keynes' *General Theory of Employment, Interest, and Money*. This development was both a cause and an effect of the change in emphasis from the relation between the money stock and the price level to the relation between the money stock and the level of income and employment.

The different approaches to money may be confusing to the beginning student of money and banking. He is apt to feel that one theory is valid and the others should be discarded, or he may become discouraged by the lack of agreement among monetary economists. The subject matter of economics is enormously complicated, and our knowledge of the operations of the economic system and the role which money plays in it are still far from perfect. However, tremendous strides have been made in our analysis of economic activity and monetary economics over the past half century.

Each of the approaches to money discussed in the succeeding chapters makes sense. They are not necessarily contradictory. Rather, they represent different logical frameworks in which the causal factors are embodied. It is not difficult, therefore, to reconcile each of the theories with the others.

QUESTIONS AND PROBLEMS

1. What is meant by the "plurality of prices"? To what extent does this notion conflict with the concept of the value of money as the reciprocal of an index of prices?
2. a. Lord Keynes stated that a "change in the value of money, that is to say in the level of prices, is important to Society only in so far as its incidence is unequal." (*Monetary Reform*, New York, 1924, p. 3.) Do you agree? Why or why not?
b. One of the "two great drawbacks" of the present money economy is that it is so fatally easy to lend and to borrow—or to appear to lend and to borrow things which are not really in existence at all, or even likely to come into existence. (D. H. Robertson, *Money*, 4th ed., New York, 1948, p. 9.) Explain carefully.
3. a. Educational institutions in general receive a substantial proportion of their income from their investments in bonds. In a period of rising prices is it easy for them to increase salaries and thus offset for their professors the effects of a higher cost of living? Is it easy for them to raise tuition fees sufficiently to enable them to offset the shrinkage in the real return from investments and to increase salaries?
b. During World War II did salaried people and unorganized workers whose wages did not rise as fast as did prices in effect pay indirect taxes?
4. a. With respect to price level changes, are the interests of debtors and creditors wholly in opposition?
b. Over periods of cyclical price increase, does labor as a whole gain or lose in real income? Why? Is this equally true for all sectors of labor?
5. a. In carrying out the injunction to users of index numbers to "know your index numbers," what leading problems involved in their compilation would you consider?
b. Do you agree with Fisher's concept of an ideal formula? Why or why not?
c. Contrast the usefulness of wholesale and retail price index numbers.
6. a. Arrange the following items (for 1950) in the form of a national income and product account so as to show gross national product and charges against gross national product.

SELECTED REFERENCES

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(In millions
of dollars)

Compensation of employees—wages, salaries, supplements, employer contribution for social insurance, other labor income	\$153,333
Personal consumption expenditures	193,568
Income of unincorporated enterprises and inventory valuation adjustment—business, professional, farm	35,964
Rental income of persons	8,039
Gross private domestic investment	48,867
Corporate profits and inventory valuation adjustment	36,241
Net interest	5,386
Net foreign investment	—2,304
Government purchases of goods and services	42,499
Indirect business tax and nontax liability	23,798
Adjustment to charges against gross national product on account of business transfer payments, statistical discrepancy, and subsidies	—1,308
Capital consumption allowances	21,177

- b. Determine the value of the GNP. Explain the conceptual basis of GNP.
- c. Derive the value of the *net national product*. Show the method of derivation.
- d. Compute the value of the *national income*. What does it represent or measure?
- e. Distinguish conceptually *personal income* and *disposable income*.
7. a. In the United States inflation occurred from 1914 to 1920 even though the nation remained on the gold standard. Explain how this was possible.
- b. In the United States prices fell somewhat during the 1920's, yet critics of banking policy speak of the period as one of inflation. What evidence can they cite in support of their contention? Do you agree?

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CHAPTER 17

Long-run Theories of the Value of Money

EARLY presentations of the theory of money were chiefly concerned with the long-run determinants of the value of money and hence with the determination of the general price level. During this period of intellectual development there were two opposing schools of thought whose differences stemmed from different assumptions respecting the nature of money. One group held that money is accepted only because it actually consists of, or can be freely converted into, a valuable commodity specified by law; the second group argued that 'money is accepted because the acceptor knows that he can, in turn, pass it on in exchange for goods and services; in other words, it is not intrinsic value which makes money acceptable, but only the knowledge that money has the quality of being a generally acceptable medium of payment.

These two premises gave rise to two schools of thought—the commodity type theories of money on the one hand and the quantity theories of money on the other. The latter represents by far the more important strand of reasoning, and it is from the quantity type theories that modern monetary analysis has evolved. The commodity theories in contrast have only a limited application today. The fact that they are based on the assumption outlined above restricts their validity to systems in which all money is either commodity money or is freely convertible into commodity money. All modern monetary systems, however, are characterized by severe limitations upon conversion of paper money into gold. Attempts to apply the commodity

theory to these systems will need to make the rather unrealistic assumption that paper money is acceptable only because people expect or hope for a resumption of free convertibility at some time in the future so that the value of the paper money is the discounted present worth of future prospects of redemption.

In spite of this important limitation, however, there are several reasons for examining the commodity theory a little further.

1. The commodity theory does provide an analysis of some of the forces which explain historical changes in the value of money which occurred during the times in which freely convertible monies were the rule rather than the exception.
2. More particularly it explains important monetary measures of as recent a date as 1933.
3. It is not beyond the bounds of possibility that we shall once again see a convertible money system in which the now broken link between the value of commodity money and the value of one or a group of commodities will be revived.
4. In considering the causation involved in the secular relationship between money on the one hand and price levels on the other, the commodity theory actually emphasizes the dependence of the money stock on price levels. This emphasis provides a useful approach in considering the problem of causation.

■ THE COMMODITY THEORY OF MONEY

There has been no one orthodox formulation of the commodity theory of money. The name, strictly speaking, is applicable to a whole group of theories which have a basic common feature—namely, that the value of money is only a reflection of the value of the money commodity and that the value of the money commodity is determined in the same manner as the value of any other commodity. Among this broad group are more specific theories—classified by some authors as the metallic or bullionist theories—which are centered around the problem of gold money (the most important single standard money system in modern times), which we shall take as representative of all those theories which link the value of the monetary unit to the relative exchange value of the "money-stuff" which lies behind the monetary unit, and we shall ignore the other money forms.

According to the bullionists, changes in the general price level are a reflection of changes in the relative exchange value of gold.

The basic argument can be easily expressed by means of a simple numerical illustration.

Let us begin with a situation in which the market equilibrium shows the following exchange ratios between three commodities—steel, wheat, and gold:

$$1 \text{ Ton Steel} = 10 \text{ Bushels Wheat} = 2 \text{ Ounces Gold}$$

Now, if the real cost of producing gold were to rise or the demand for gold were to rise relative to its supply, the market would no longer be in equilibrium at these exchange rates. In the new equilibrium the exchange value of gold would obviously be higher relative to steel and wheat. Let us, for example, say it will be twice as high, that is,

$$1 \text{ Ton Steel} = 10 \text{ Bushels Wheat} = 1 \text{ Ounce Gold}$$

Such alterations in relative value are continuously taking place in a dynamic society under the pressure of changes in tastes, discovery, and technology.

Now, when we move away from a "barter" situation and think in terms of *money*, we introduce a new unit, for example, the dollar, and express relative values as "prices." But under a commodity money system the dollar is merely a counting unit which derives its acceptability only because it is defined by law as equivalent to (and is convertible into) a certain quantity of one of the valuable commodities. In our case let us say that the "dollar" is defined as $\frac{1}{20}$ of one ounce of gold. Since the "dollar" is not ever wanted for its own sake, but only for the $\frac{1}{20}$ ounce of gold which it contains, the relative exchange values of commodities will be exactly the same under a "price" system as they were under a barter system. In the example above where we had:

$$1 \text{ Ton Steel} = 10 \text{ Bushels Wheat} = 2 \text{ Ounces Gold}$$

we would now have:

$$\begin{aligned} 1 \text{ Ton Steel} &= 40 \text{ Dollars} \\ 1 \text{ Bushel Wheat} &= 4 \text{ Dollars} \end{aligned}$$

A change in the exchange value of gold relative to other commodities would automatically be followed by a change in the dollar prices of these commodities. In the situation above where the new equilibrium rates became:

$$1 \text{ Ton Steel} = 10 \text{ Bushels Wheat} = 1 \text{ Ounce Gold},$$

prices would become:

1 Ton Steel = 20 Dollars

1 Bushel Wheat = 2 Dollars

Looked at in this way the price level (that is, the average of all commodity prices), is nothing more than the "value of the money metal relative to all other goods"¹ and variations in the price level are due to variations in the relative value of the money metal.

Under a pure specie money the stock of money and the prices of other goods in terms of the money commodity are determined in the market by the demand for the commodity for monetary and other uses and by the supply of the commodity which is ultimately determined by costs of production. In equilibrium, the cost of producing a unit of the money commodity is equal at the margin to a unit of the commodity.

If discovery or invention makes the production of the money commodity relatively cheap, its cost of production will fall below its price, output will be stimulated, and the stock of money will tend to increase at a greater rate than that required to keep prices stable. Equilibrium will be restored when the increased stock of money has raised the prices of other commodities, and hence the cost of production of the money commodity, sufficiently to reduce the output of the money commodity to its normal level. A rise in the prices of other goods increases the cost of producing the money commodity and so tends to reduce the current rate of production; it also makes the money commodity relatively cheap for nonmonetary uses and thus tends to reduce the fraction of the existing stock used for monetary purposes. Both effects tend to halt and reverse the rise in prices.

In order to complete the understanding of changes in the price level, the commodity theory needs to go further and explain variations in the relative exchange value of gold. Even if we restrict our attention to a pure specie money system, the commodity theory breaks down when we attempt to analyze the cause of fluctuations in the exchange value of gold. The value of gold must depend on two factors:

1. The supply of gold,
2. The demand for gold.

Since gold is practically indestructible, the stock of gold is the result of centuries of accumulation. Because current output of the money commodity is generally a small fraction of the total existing

¹ J. L. Laughlin, *Principles of Money* (New York, 1903), Chap. 9.

stock, the stock of the money commodity can be taken as almost constant over the short period.² Since changing cost factors can bring about only very small changes in the stock of gold, the main cause of fluctuation in the value of gold must lie in the demand for gold.

Although part of this demand (the industrial demand, and the demand from Oriental countries for a hoardable commodity), is a demand for gold per se, the largest segment of demand is the demand for its use as money or as backing for paper money. This demand is determined by the volume of trade and economic activity, and this in turn is strongly influenced by what is happening to the price level. Thus, the general price level far from being *determined* by the relative value of gold, is an important determinant of the demand for gold and hence of what this value shall be. It would appear therefore that even in the case of a pure specie money system, the analysis provided by the commodity theory is incorrect.

AMERICAN GOLD PURCHASE AND THE COMMODITY THEORY

The commodity theory at least in part provides a theoretical foundation for the gold purchase program initiated in the United States in 1933. At that time, the price level and economic activity in this country, as well as in the rest of the world, were at very depressed levels. It was felt that any measure which would bring about a rise in the price level would assist in initiating the movement toward over-all economic recovery. The solution prescribed by the commodity theorists was that

1. Commodity prices are a reflection of two factors.
 - a. The relative value of gold.
 - b. The definition of the dollar in the terms of gold.
2. It would be possible to double the price of all commodities by merely doubling the price of gold.

For example, the price of steel of \$40 per ton in the previous illustration (page 465) is a result of

1. a. The relative value of steel to gold, that is, 1 Ton Steel = 2 Ounces Gold.
 - b. The dollar price of gold which is \$20 per ounce.
2. By doubling the price of gold per ounce to \$40, then 1 Ton Steel = \$80.

² With given technical methods of production for the money commodity, output is greater when the value of the money commodity is higher (the price level lower) than when the opposite situation prevails.

This reasoning apparently had a strong influence in bringing about the devaluation of the dollar in 1933-1934 when the dollar price of gold was raised from \$20.67 per ounce to \$35 per ounce.

According to the commodity theorists, this should have changed all prices upward by some 70 percent. Apparently the modern world did not behave as the commodity theory prevised. Almost everybody continued to reckon in terms of dollars—and not in terms of gold. Prices did not change perceptibly subsequent to the devaluation. Later in the year a slight rise of prices did take place—but for reasons which were not connected to the reasoning of the commodity theory. Part of the rise was due no doubt to an influx of gold and to a rise in the dollar value of the reserves of the banking system, which affected prices through its effect on the stock of money. But this is the *modus operandi*, not of the commodity theory at all, but of the quantity theory of money. Part of the price rise might be attributed to a stimulation of American exports induced by the new lower value of American goods in terms of foreign currencies. The events following 1933, therefore, can be taken as a demonstration of the inadequacy of the reasoning which lies behind the commodity theory. Gold and the movements of gold do play a role in influencing the stock of money and hence do influence the price level. But the value of money itself cannot be reduced to a problem which concerns itself only with the relative exchange value of gold.

■ THE QUANTITY THEORY AND ITS THEORETICAL SETTING

We turn now to examine the other and more important branch of monetary reasoning about the value of money. Before analyzing the quantity theory itself, however, it will be necessary to review briefly the place assigned to monetary theory as a whole within the general framework of economics. An understanding of this point will help us to note both the shortcomings of the quantity theory as well as the later transition to modern monetary analysis.

Beginning with the classical authors of the early nineteenth century, the main stream of economic analysis reasoned in "real" terms: All exchanges are fundamentally the exchange of goods and services against other goods and services. Money is only a medium which facilitates the exchange by providing an intermediary link into which goods are exchanged and which in turn is exchangeable into other goods. Apart from this facilitating or "lubricating" function, money plays no integral part in the working of the economic machine. In order to understand the working of the economic system, the "real" analysis looked beneath the veil of money.

In their search for fundamentals, the theorists examined economic behavior as if money did not exist. Thus, the act of saving was thought of as an act of surrendering a certain proportion of one's real income; value was defined as the rate of exchange between one good and other goods; the rate of interest was regarded as a percentage premium which borrowers paid for the use of goods and resources surrendered to them by the lender. Money prices were regarded as surface phenomena which were superimposed on the network of "real" relationships. Further, it was believed that it was immaterial to the real relationships whether "prices" were expressed in terms of one unit of account or another—just as long as the unit itself was constant.

ROLE OF THE RATE OF INTEREST

One important foundation of the whole classical system of reasoning was the classicists' theory of interest. This theory contended that the rate of interest was dependent on "real" factors—the demand for capital on the one hand and the supply of capital on the other. The demand for capital, in turn, was an outcome of

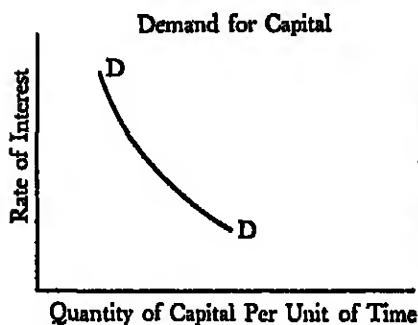


FIGURE 28

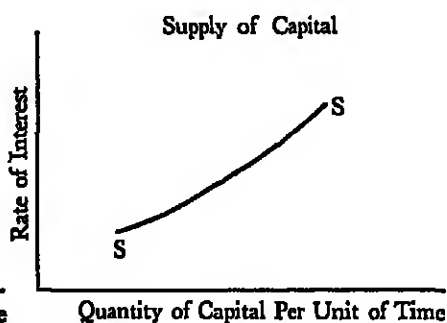


FIGURE 29

the desire of some groups within the economy to build new capital goods (new factories, new plant and equipment) and to engage in investment activities in general. The supply of capital was a function of the willingness of the economy as a whole to save, that is, to abstain from immediately consuming the entire available income. It was believed that the schedule of demand for capital was negatively related to the rate of interest (Figure 28). In other words, the lower the rate of interest, the greater would the demand for capital be. The supply of capital, or savings curve, on the other hand, was postulated as having a positive slope (Figure 29). The reasoning

behind this was that higher rewards for saving (in the form of a higher rate of interest) would induce greater savings.

The rate of interest is the result of these two forces acting in conjunction. It was also the "price" which would ensure that all savings would exactly be absorbed by investment. If savers attempted to save more (Of) than borrowers were willing to invest (Og) at a given rate of interest (I_a), then competition between savers would force the rate of interest down until a position of equilibrium (I_b) is achieved at which the discrepancy no longer exists since the quantity of savings offered is equal to the quantity demanded. The operation of the reasoning is depicted in Figure 30.

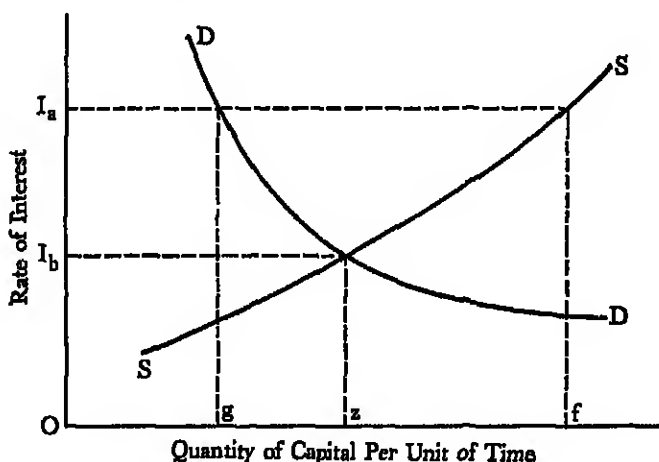


FIGURE 30

USE OF SAY'S LAW

This reasoning provided the formal basis for a very important assumption of classical economics. This assumption—known as Say's Law—was that a given volume of production automatically created sufficient demand to absorb that volume of production. In Figure 31 the total product of the economic system is viewed in two ways. Firstly, the entire physical result of the productive process is thought of as a supply stream of goods and services. Secondly, the costs of producing this stream (including profit as a cost) are viewed as total community real income which must be exactly equal to the supply stream. If savings did not take place at all, it is easy to see that the expenditure of incomes would give rise to a demand for goods (total effective demand), exactly equal to the supply of goods and services (total effective supply) at the existing

price level. But if savings take place, not all income is expended. Does this mean that effective demand will fall short of effective supply? No, for as we have seen, the volume of demand for invest-

$$\text{Production} = \text{Consumption Goods} + \text{Capital Goods (Investment)}$$

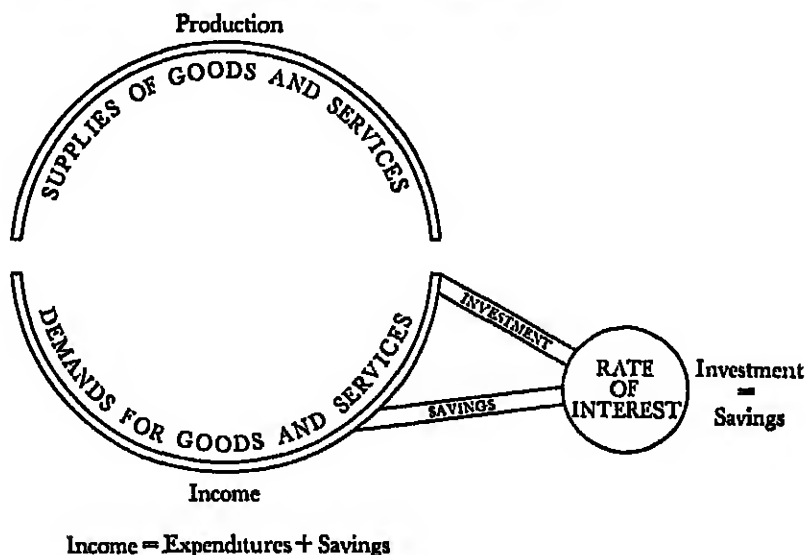


FIGURE 31

ment purposes will be exactly equal to the volume of savings, thanks to the action of the rate of interest. Thus, the effective demand for consumption and the effective demand for investment would just exactly equal the effective supply of all goods.

■ THE EQUATION OF EXCHANGE

We have seen that economic theory proper was concerned in the main with explaining the underlying relationships between economic forces which give rise to a system of relative exchange values between goods. Money prices were regarded as a translation of these basic exchange ratios into *absolute* terms. The only role played by the purely monetary factor in the classical system was to determine the level of absolute prices. Thus, the only task of monetary theory within the classical system was to explain fluctuations in the value of the monetary unit or the unit of account and hence to explain fluctuation in the general level of absolute prices. We have already seen how the commodity theorists solved this prob-

lem by arguing that the absolute price of any good (or group of goods) was the result of the gold price of that good multiplied by the money price of gold (which is nothing more than the statutory definition of the money unit in terms of gold).

The quantity theorists took a much broader view and began with the premise that money was not wanted for its own sake, but only because of the command over goods and services which the possession of money gives to the holder. In order to get any satisfaction or utility out of money, its owner first had to *spend* it. But unlike any other commodity which is used, money is not "used up": It merely moves into somebody else's possession, who in turn uses it by spending it. Of course, not all money which comes into people's possession is spent. Part of it is set aside and loaned out to borrowers. But borrowers themselves do not borrow except to use the proceeds of their borrowing, which can only be done by spending it. Thus, we can say that all money which is received is spent—either directly by its recipients or indirectly through being loaned and then spent.

Now, each item or piece of money circulates at a different speed from other pieces. A particular one-dollar bill may pass through fifty hands in the course of a year and thus do "\$50" worth of business; another piece may lie idle for longer stretches between each transaction and achieve only "\$3" worth of business. Similarly, each dollar held as a bank deposit can accomplish many dollars worth of business in the course of a year. Bank deposits, of course, are not visible money, but the principle is the same. When an individual writes a check for \$10 against his deposit with a bank, this much is extinguished from his account, but it reappears as an increment to another account. If each dollar (whether in currency or in the form of a bank deposit) of money in our system is tagged with a numerical subscript, and the number of times that particular dollar (let us say \$1₁) turns over during the course of a year is tagged with a similar subscript (*V*₁), then the total work which all the money achieves in a year is given by

$$\$1_1V_1 + \$1_2V_2 + \$1_3V_3 + \cdots + \$1_nV_n$$

The sum of the series represents the total spending which has taken place in the economy.

Now, *V*₁, *V*₂, . . . *V*_{*n*} is each a different figure. If we take the *average* value of these figures for the year and call it *V* (with no subscript), then we can express the total work achieved by all the money in the economy as *MV* where *M* is the total quantity of money.

Every time some money is spent it is exchanged for an equivalent value of goods or services. We can think of the total trading of a

country as consisting of a stream of money flowing in one direction and a stream of goods and services flowing in the opposite direction in exchange for one another. If each of the units of goods and services exchanged is called $T_1, T_2, T_3 \dots T_n$ and the price at which each unit is exchanged is called $P_1, P_2, P_3 \dots P_n$, then we can express this stream as the sum of

$$P_1T_1 + P_2T_2 + P_3T_3 + \dots + P_nT_n$$

or in more general terms as PT .

Since total money spending must be equal to total value of goods and services on which that money has been spent, we can readily see that MV must equal PT , or in equation form

$$MV = PT$$

This identity is the famous equation of exchange where during the period of time envisaged,

M is the total quantity of money.

V is the average rate of turnover of that money—or more briefly the velocity of money.

P is the average price level of all goods and services traded.

T is an expression for the total units of all goods and services traded.

In itself the equation of exchange is not a "theory" since it says nothing about what determines what. It is a mathematical identity expressing the volume of business in two ways—by measuring the money spent and the value of goods exchanged. The identity *must* be correct if its component terms are defined correctly. Its usefulness lies in the fact that it reduces the vast and complex network of trade into two basic factors—the demand for money (which is equivalent to the supply of all goods offered against money) and the supply of money (which is equivalent to demand for all goods). These factors in turn are analyzed as consisting of two key variables each. The demand for money (or supply of goods), PT , is made up of T —the volume of goods and P the average price level of goods. The supply of money MV is made up of the volume of money M and V the average velocity of circulation of money. Underlying M , V , and T are a host of objective facts and human decisions which ultimately determine them.

■ THE QUANTITY THEORY—THE TRANSACTIONS APPROACH

The quantity theory uses the basic framework of the equation of exchange in order to describe the *causal* mechanism by which the price level is determined. According to the boldest form of the quantity theory, the volume of money determines the price level; the latter varies directly and in proportion to changes in the volume of money. In this crude presentation the quantity theory is as old as economics itself.³ In the classical foundation of the quantity theory as expressed by John Stuart Mill⁴ the importance of "velocity" is recognized as a factor on the supply side of the equation. However, with the publication in 1911 of Irving Fisher's *The Purchasing Power of Money*⁵ the assumptions and premises of the quantity theory were subjected to a comprehensive examination.

The Fisher formulation divides the volume of money into two components:

coin and paper currency— M
and demand deposits— M'

and similarly distinguishes between the velocity of circulation of coin and paper currency (V) and the velocity of demand deposits (V'). Thus, instead of

$$MV = PT$$

we have

$$MV + M'V' = PT$$

Fisher's analysis proceeded as follows:

1. The price level, P , is normally the one absolutely passive element in the equation of exchange. It is controlled solely by the other elements in the equation of exchange, but exerts no control over them.⁶

2. The total volume of transactions, T , which is equivalent to the total physical volume of trade, is determined by population, natural resources, and technical developments. These change only slowly, and T can be regarded as constant over short periods of time. Fisher was assuming that full employment of all resources would normally exist.

³ David Hume, *Political Discourses* (1752).

⁴ John Stuart Mill, *Principles of Political Economy* (1848), Book III.

⁵ Irving Fisher, *The Purchasing Power of Money*, rev. ed. (New York, 1926).

⁶ *Ibid.*, p. 172.

3. V and V' depend on factors which are also "normally" quite stable and can therefore also be considered to be independent of the other factors in the equation. Among the factors influencing V and V' , Fisher includes individual payment habits; the system of payments in the community such as the frequency of receipts and disbursements and the regularity of receipts and disbursements; the density of population and the development of transportation.⁷

4. M' , the volume of deposit money, "normally" bears a constant ratio to the quantity of coin and currency and "under any given conditions of industry and civilization deposits tend to hold a fixed or normal ratio to money in circulation."⁸

5. Since a change in M produces a proportional change in M' , since V , V' , and T can be regarded as constant and P is passive, then variations in the price level, P , must be due to variations in M . In Fisher's words "One of the normal effects of an increase in the quantity of money is an exactly proportional increase in the general level of prices . . . we find nothing to interfere with the truth of the quantity theory that variations in money (M) produce normally proportional changes in prices."⁹

The validity and usefulness of Fisher's theory depend of course on the validity of the assumptions which underlie it. Are V , V' , and T independent of M and P ? Is the price level always "passive"? Is the ratio between M' and M a fixed one? Fisher himself recognized that during periods of transition and in the short run one or more of these assumptions might be invalid—but held, nevertheless, that such periods are actually temporary and that in the long run the more "normal" relationships would hold.¹⁰ Thus, the usefulness of the quantity theory is limited only to long-run periods, and Fisher's analysis is not applicable to those "transition" periods in which both velocity and trade are undergoing changes.

If such periods of transition are the exception rather than the rule, their existence would not seriously affect the usefulness of the quantity theory. However, even Fisher observed that "periods of transition are the rule and those of equilibrium the exception."¹¹

During these periods almost all the assumptions of the quantity theory are unjustifiable. The price level far from being a passive factor often plays a decisive role in determining the volume of trade, T . T itself can be regarded as being determined by external factors (such as population, technology, etc.) only if continuous automatic full employment is assumed. In practice, however, the volume of

⁷ *Ibid.*, p. 79.

⁸ *Ibid.*, p. 151.

⁹ *Ibid.*, pp. 157, 183.

¹⁰ *Ibid.*, pp. 169-170.

¹¹ *Ibid.*, p. 71.

employment varies continuously with the business cycle, and T needs to be introduced into the framework of analysis as both a cause and an effect of changes in the other elements of the equation of exchange. Moreover, the elimination of velocity as a constant is unjustified. There are strong indications that the velocity of circulation is affected cyclically by the volume of transactions, which are in turn linked to the behavior of prices. Finally, the quantity of demand deposits and the velocity of circulation cannot be regarded as two separate magnitudes, for they appear to be closely linked in practice. Greater activity which leads to more rapid use of money also leads to greater use of bank credit and hence to a rise in the volume of bank money in existence. The existence of these numerous causal cross-relationships among P , T , V , and M tends to render less useful the quantity theory as an analytical device.

■ THE QUANTITY THEORY—CASH-BALANCES APPROACH

The cash-transactions or the transactions-velocity approach as it is sometimes called, enjoyed its greatest popularity in the United States, due largely to the work of Irving Fisher. In Europe—and particularly among the Cambridge economists (Marshall, Pigou, Keynes, and Robertson)—a slightly different approach, known as the cash-balances theory, was used in expounding the quantity theory of money.

Like the transactions-velocity version explained above, the cash-balances version approaches the problem by comparing the total stock of money (M), against the total volume of trade (PT), achieved by the use of money. Since, however, the money stock M is a static concept and refers to a *moment* of time whereas the volume of trade PT refers to a period of time (most commonly a year), a direct comparison of M against PT is not meaningful. In order to achieve a comparison, the transactions-velocity approach adjusts the stock of money by a velocity-per-period factor V , giving a stock of money factor equal to MV which can now be equated against PT since both factors refer to the same *period* of time. We then have

$$MV = PT$$

The cash-balances theory uses an alternative approach. Instead of adjusting M by a velocity factor in order to equate it with PT , it adjusts PT by a k factor in order to equate it against M . The k concept asks "over how large a proportion (a tenth, a twentieth, etc.) of their annual expenditure stream do people try to have command by the holding of money"? In other words, the demand for money

is thought of as being definitely related to the volume of annual trade, that is, demand for money $= PT \cdot k$. In this form the demand for money $PT \cdot k$ refers to a moment of time and thus is comparable with the supply of M which also refers to a point of time. If demand and supply are equal, we can say

$$M = PT \cdot k$$

In many respects the two formulations amount to exactly the same thing. $V = PT/M$ represents the number of times per year that M revolves in achieving a total volume of trade. $PT \cdot k = M/PT$ represents that fraction of a year's trade which the total money stock will achieve if it turns over just once. Thus, V and k are reciprocals and $1/V$ can be interchanged with k to give identical results. As Robertson has stated, the two types of equations are really different observations of the same phenomenon; the cash-balances approach is concerned with "money sitting" and the cash-transactions approach with "money on the wing."¹²

The cash-balances approach, however, contains an important emphasis which is not observed in the transactions version. This is the emphasis which the k concept places on human *motives* in contrast with the highly mechanistic nature of the velocity concept. It is this fact which led the Cambridge economists into a consideration of several important channels along which monetary theory has developed in the last two decades. For, in attempting to understand the determinants of k , and the reasons for its stability, or instability, monetary theory had to widen its scope of inquiry to include problems of uncertainty, the rate of interest and other magnitudes which the transactions version left unconsidered.

Let us return to the equation $M = PT \cdot k$. This analyzes an *equilibrium* condition in which the demand for money to hold (a proportion k of annual trade PT), is exactly equal to the stock of money, M , available for holding. But what if $PT \cdot k$ were not equal to M ? How would disequilibrium be transformed into equilibrium? According to the cash-balances version, the answer was much the same as Fisher had given. If M and $PT \cdot k$ were out of equilibrium, then they would be brought into equilibrium by a change in either M , P , T , or k . Since " k " is determined by external forces—human propensities, habits, and the like—we can eliminate changes in k as the equilibrating factor. Similarly, if T is determined by the volume of natural resources, population density, technology, etc. (like Fisher, the Cambridge economists also assumed full employment was the

¹² D. H. Robertson, *Money*, 4th ed. (New York, 1948), p. 28.

automatic normal state of affairs), we can also eliminate changes in T as a possible source of equilibration.

This leaves only M and P . Now, there is no way in which the community *as a whole* can change the volume of M . An individual holder of money can increase or decrease his individual holdings—but only by spending less or more (faster or slower) than he has been accustomed to do in the past. But everybody cannot increase or decrease his stock of money in this manner, for what one succeeds in spending must be some other individual's receipts. The attempt of all people to decrease their money stocks by more rapid expenditures can result only in increased expenditure on goods, services, and the other things on which the money is spent. If T is constant, this can result in only one thing—an increase in the price level. Similarly, any attempt by all people to increase their money stocks will result only in decreased expenditure on goods and services, and hence in a declining level of prices.

The change in the price level (P) will continue until a situation is achieved in which M and $PT \cdot k$ are once again in equilibrium. Thus, P (the value of money) at any moment of time is fixed at the level where the supply of and demand for money are equalized. This conclusion is essentially the same as that arrived at by Fisher—namely, that with a given k (or V) and T , changes in the money stock normally result in a proportional change in the price level.

It was in proceeding beyond this point in the analysis that the greater flexibility of the cash-balances approach found its expression. Although Fisher and others did devote some examination to situations in which velocity is a variable factor, the mechanistic nature of V did not lend itself to easy analysis. The k concept, linked as it was to *motives*, did lend itself to treatment as a variable. For instance, the $M = PT \cdot k$ equation can just as easily be used as a framework for analyzing changes in the price level due to changes in k as it can be used for analyzing changes initiated by changes in M . Thus, we can begin with a given equilibrium between the supply of and demand for cash balances at a given k and trace the effect which changes in k will have. Let us take a numerical example.

$$\begin{aligned} M &= \$80 \text{ million} \\ PT &= \$800 \text{ million per annum} \\ k &= \frac{1}{10} \end{aligned}$$

This is an equilibrium position. The economy desires to hold $\frac{1}{10}$ of \$800 million, that is, \$80 million, in the form of money—and since the stock of money is exactly equal to \$80 million, the community as a whole is satisfied and there are no forces present which

tend to upset the equilibrium. Now let us say that for some reason or other, the community should wish to decrease the proportion of PT (\$800 million), which they hold in the form of money from $\frac{1}{10}$ to $\frac{1}{20}$. This means they wish to decrease their cash holdings from \$80 million to \$40 million. Unless the monetary authorities decrease M there is no way in which the community as a whole can achieve its desire. What each individual member can do is to expend his now redundant money holdings and exchange money into goods and services. Since everybody is attempting to do the same thing, and since T , the physical volume of goods and services cannot increase in the short run, the only effect which the behavior will have is to drive up the price level. When the price level has doubled, then PT will have doubled (in terms of dollars), from \$800 million to \$1,600 million. At this point the total money held by the community (\$80 million), which we have assumed remains unchanged, *does* represent $\frac{1}{20}$ of the total volume of trade (now \$1,600 million). The k desire is satisfied, and the situation is one of equilibrium once again.

When the cash-balances version retained a strict interpretation of the quantity theory—namely, that changes in money supply led to *proportional* changes in the price level—the examination of the k factor itself led to conclusions not very different from those established by Fisher with regard to velocity. Although the motives for holding money could be analyzed more directly than the causes determining velocity, the main emphasis was placed on the so-called “transactions” motive for holding money. This referred to the fact that businesses and individuals found it necessary to hold a ready money supply to bridge the gap between receipts and disbursements. The amount of money so held was first to be related to the volume of trade, to paying habits, and most of the other factors Fisher had taken into account in explaining the determinants of V . Like Fisher, the Cambridge School concluded that k was dependent on fairly stable factors and would, therefore, itself be a stable figure. They also further concluded that the sole important cause of changes in the price level was changes in the stock of money.

■ THE QUANTITY THEORY—INCOME VELOCITY

In the familiar transactions-velocity equation $MV = PT$ ¹² all payments are related to the stock of money. PT represents the total value of all transactions involving the use of money, and this is obviously equal to total spending MV . The average transac-

¹² Or $MV + M'V' = PT$, if we wish to distinguish between currency in circulation (M) and demand deposits (M').

tions velocity (V) is simply PT divided by the stock of money M ; V is a measure of the turnover of money in all its uses.

The total value of transactions includes not only newly produced final products whose production generates income and employment, but it also includes every purchase and sale of raw materials and semifinished goods as they progress through the various stages of manufacture; it also includes financial transactions such as the exchange of previously existing rights, claims, and titles. Thus, MV represents a much larger volume of spending than that which supports current production and employment.

Because of their interest in the interrelationship of money and the quantity and prices of final products currently produced, some economists have preferred to deal with a form of quantity equation relating the stock of money to the Gross National Product or National Income. The income velocity of money (or circular velocity as it is sometimes called)¹¹ is the ratio of the GNP¹² to the stock of money. By income velocity we mean the average number of times in a given period that each dollar of the monetary stock passes from consumer to producer through the production and exchange process and so back to consumers. Suppose, for example, that the stock of money in a given period is equal to \$200 billion and total expenditure on final output (GNP) amounts to \$300 billion in the same period. Then the income velocity of money (V_y) can be obtained by dividing total expenditure by the stock of money.

$$V_y = P_y T_y / M$$

where P_y is the average price level of final products.

T_y is the physical volume of final products,

M is the stock of money.

V_y , the income velocity of money, is 1.50 per year or .125 per month. The link between money and income in value terms is the income velocity of money (M_y).

Part of the stock of money is used to purchase the final products that comprise GNP; this portion of the money stock is often described as the *active* balances of money. Another part of the monetary stock consists of cash balances used to finance that portion of transactions that is not included in the final products of the economy; these are often called *transfer balances*. The third and last component of the monetary stock consists of cash which is immobilized

¹¹ See J. W. Angell, *The Behavior of Money* (New York, 1936)

¹² Some writers prefer to relate the stock of money to Net National Product or to National Income.

in idle balances for contingency or speculative purposes; these balances are characterized as *hoards*.

We have defined income velocity as the ratio of national income produced in a given period to the average stock of money available to the community during the same period. It should be apparent that the second and third components of the stock of money have an income velocity equal to zero. Put differently these last two components of the monetary stock play no part in making the payments that comprise the GNP. The active cash balances carry the load.¹⁰

The income velocity of money depends upon three sets of factors. The first concerns the rate at which active balances—used to finance national income—move from recipients of income to producers of goods and services and back to individuals as income. The income velocity of active balances is determined by the payment habits of the people, by the character of business organization, and by the workings of the mechanism for transferring payments. These factors are generally stable from year to year and hence the income velocity of active balances is stable over time.

It should be pointed out that the income velocity of active balances determines either (1) how much active money at minimum is needed to finance a given GNP (or national income) or (2) how large a national income can be financed with a given stock of money devoted to active balances. Thus if we know

$$Ma \cdot Vya = PyTy$$

where Ma is the stock of money devoted to active balances.

Vya is the income velocity of the stock of active money.

Py and Ty remain as above.

Given $PyTy$ and Vya , we can solve for Ma . Given Ma and Vya , we can solve for the national income. Note that these solutions do not imply that the stock of money determines national income or conversely that national income determines the stock of money.

The second factor determining the income velocity of money is the share of the total stock of money which is held as transfer balances with zero income velocity. The third factor affecting the income velocity of money is the fraction of the money stock held as hoards. The greater the demand for these balances with zero income velocity, the smaller is the share of the total money stock available to finance purchases of final products. If the income velocity of active balances is given, the size of the national money income is limited by the monetary stock available to purchase final products.

¹⁰ See Shaw, *op. cit.*, pp. 345-352.

Thus, an increase in hoards or transfer balances may serve to reduce the GNP.

As long as the income velocity of money is governed by the income velocity of active balances and the latter is stable, we should expect to find the income velocity of money remaining stable over time. There is evidence to show that between 1899-1929 income velocity displayed a marked tendency towards stability.¹⁷

The factors affecting the income velocity of money which would be expected to produce substantial year to year fluctuations in income velocity are changes in transfer balances and hoards. The decline in income velocity since 1929 has raised speculation as to the possibility of a secular decline in this economic magnitude. On the one hand, there are authorities who explain the post-1929 decline in income velocity mainly as a result of the abnormalities of the depression¹⁸ and war periods. Still others feel that the community's demand for cash balances has undergone a fundamental change so that the ratio of cash balances to income has risen permanently.¹⁹

QUESTIONS AND PROBLEMS

1. "A 'quantity theory' [of money] as a closely defined conception, leaving no room for ambiguities, does not exist. We have not one theory but an indefinite number of theories, all of them recognizing the influence of the quantity of money on prices, but every one in a different degree and extent." (J. S. Lewinski, *Money, Credit and Prices*, London, 1929, pp. 93-94.) Discuss this statement critically, referring to the two leading approaches to the quantity theory of money.
2. "The major price swings up to the middle of the nineteenth century appear to correlate clearly with gold and silver production. Since then, and particularly in recent decades, they do not."
 - a. Why may this be true?
 - b. Does this make out a case for either a quantity or a commodity theory of money value? Why?
3. a. Does the quantity theorist necessarily assume that the material of which money is made is of no consequence in determining its value?
 - b. Is the quantity theory applicable to a gold standard nation? By what means is the supply of gold controlled so as to keep its value in the arts and its monetary value identical?

¹⁷ J. W. Angell, *The Behavior of Money* (New York, 1936), and *Investment and Business Cycles* (New York, 1941), Chap. 9.

¹⁸ Angell, *The Behavior of Money*, *op. cit.*, p. 199.

¹⁹ See C. Warburton, "The Secular Trend in Monetary Velocity," *Quarterly Journal of Economics* (February 1949); also his "The Volume of Money and the Price Level between the World Wars," *The Journal of Political Economy* (June 1945).

4. a. The equations of the quantity theory "are nothing more nor less than shorthand expressions designed to indicate the nature of the variables whose operation can be shown to influence prices." (A. W. Marger, *The Theory of Prices*, New York, 1938, Vol. 1, p. 81.) Do you agree? Explain the basis for your answer.
- b. Explain why k is the reciprocal of V .
- c. Do the equations represent any particular theory of price-level determination?
5. a. Why is the title of this chapter "Long-Run Theories of the Value of Money"?
- b. How is the type of theory a writer favors related to the view he holds respecting the nature of money?
6. Explain the twofold theoretical basis for the classical assumption, in developing the quantity theory, that full employment existed.
7. "So long as there is unemployment, *employment* will change in the same proportion as the quantity of money; and when there is full employment, *prices* will change in the same proportion as the quantity of money." (J. M. Keynes, *The General Theory of Employment, Interest, and Money*, p. 296.) Explain.
8. What happens to the demand for money (cash balances) when:
 - a. The level of business transactions increases?
 - b. The level of prices falls?
 Is your answer the same for consumers, businessmen engaged in current operations, and holders of cash savings awaiting investment?
9. a. Do you believe that the income-velocity approach to the quantity theory is preferable to the transactions-velocity approach? Explain why or why not.
- b. In the income-velocity analysis, what advantage is there in distinguishing three classes of cash balances?
10. What effect does the introduction of bank credit and central banking have upon the validity of:
 - a. The quantity theory?
 - b. The commodity theory?

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CHAPTER 18

The Evolution from the Quantity Theory

THE strict interpretation of the quantity theory discussed in the last chapter—namely, that changes in the stock of money bring about proportional changes in the price level—was based on an oversimplified set of assumptions. Today no economist would hold with the validity of the assumptions or with the conclusion of the quantity theory as it was outlined. As the assumptions have been replaced with more realistic premises, interpretations of the equation of exchange have become broader and broader. These “modern” versions are in a sense variants of the original presentation and could therefore continue to be called “quantity theories.” Some of these are, however, so far removed from the Hume-Mill-Fisher version of the quantity theory that it would probably be wiser to restrict the name “quantity theory” to the earlier version alone; some authors prefer to refer to the strict form of the quantity theory as the *transactions velocity theory*.

■ SHORTCOMINGS OF THE QUANTITY THEORY

Most of the evolution in ideas can be traced from some definite drawbacks which the quantity theory contained. A discussion of these drawbacks, therefore, should provide an ideal point of departure for a discussion of the post quantity theory developments.

SPECIFIC CRITICISMS

The main inadequacies of the quantity theory itself can be summarized under four heads.

The Concept of the General Price Level The quantity theory made little attempt to distinguish between the effect of a varying money stock on different *sections* of the economy but blanketed them under a single over-all concept of *P*. In actual practice a considerable variation appears to exist between the price behavior in various sectors of the economy. Certain prices are consistently more flexible than others. The important effect of money on the economy is not so much a question of its effect on prices in general as a question of its effect on the *relative structure* of prices. It is through a distortion of relative prices and the consequent changes in income distribution that the crucial effects of inflation and deflation are achieved.

The Omission of the Short Run The quantity theory provides no guide to short-run changes in the price level which are associated with the business cycle. Most of its relationships depend on "normal" or "long-run" values which do not hold in the short run. Since the short-run changes provide most of the really serious problems of a monetary economy, the quantity theory alone is by no means a complete theory of money.

The Omission of the Rate of Interest as a Link Between Money and Prices The quantity theory traces the effect of money stock on the price level as if it were a direct one. Even before the quantity theory was developed, practical observers had noticed that the initial effect of a change in the stock of money is not on commodity prices at all but on the rate of interest. Although the quantity theorists themselves were aware of this relationship, they made no serious attempt to incorporate the interest effect into the theory of money. Part of the reason for the failure lay no doubt in their concern with the long run; in the long run it was believed that the changes in the money stock would be fully reflected in changes in the price level and that the interest rate itself would be unaffected by price level movements and would be determined only by the real forces of supply and demand for real capital.

The Omission of Cross-Causation Finally, the quantity theory assumes independence of the variables and contains no analysis of the complex interrelationships possible between price, velocity, trade, and the stock of money. Thus, an increase in *M* might be offset by an increase in *T*; a decrease in *M* might be offset by an increase in *V* and so forth.

All in all, the quantity theory failed to provide the answers to a

whole host of questions which arose on the subject of the relationship between monetary forces and economic magnitudes. Wicksell, who played a pioneer role in the evolution from the quantity theory, said in his *Lectures on Political Economy*:¹

A general rise in prices is therefore only conceivable on the supposition that the general demand has for some reason become, or is expected to become, greater than the supply. . . . Any theory of money worthy of the name must be able to show how and why the monetary or pecuniary demand for goods exceeds or falls short of the supply of goods in given conditions.

NEWER APPROACHES

In order to provide an explanation for the phenomena of cyclical movements, monetary economists invoked several techniques. In the first place, they began to reason in dynamic rather than static terms. The quantity theory had merely indicated equilibrium situations—the newer theories actually tried to trace the path of the various economic magnitudes in the movement toward equilibrium. Thus, we may call the newer theories “dynamic” theories. In order to trace economic repercussions, the successive rounds of spending (which finally make up the *MV* factor in the quantity theory) are themselves examined—first as they are received by people in exchange for goods and services and thus become the recipient’s income, and then as they are expended and become somebody else’s income. Thus, the newer theories are sometimes called *income-expenditure theories*. Thirdly, the evolving formulations gave considerable weight to the manner in which a change in the stock of money acted upon the economic system. Most analyses traced the effect of monetary change primarily on the rate of interest and through the rate of interest on economic activity and hence on the price level. Thus, we may call the newer theories *interest-rate theories*. Since the *modus operandi* of the changing interest rate is that it acts mainly on some segment of the economy relative to other segments, most theories also introduced the concept of particular price levels in addition to the general price level with which the strict quantity theory had exclusively dealt.

In a broad sense the monetary theories which evolved from the quantity theory all ascribed a plethora of loanable funds and favorable costs of borrowing as responsible for initiating or reinforcing a cumulative expansion in investment and economic activity. Moreover, they emphasize the fact that retrenchment by financial institu-

¹ Vol. II, pp. 159-160.

tions is an originating factor in the downswing in investment and economic activity. In spite of the many features which they had in common, the monetary theories which evolved from the quantity theory also differ from each other so considerably in emphasis that the procedure of this chapter will be to examine the writings of representative spokesmen of the various subgroups rather than to attempt to fuse the entire group in a single treatment.

■ WICKSELL

Although Wicksell belongs to a generation of economists previous to the period under survey, his pioneer work in the field of monetary theory has provided the point of departure for much of the development in the field. His main ideas are contained in two works—*Interest and Prices* and *Lectures in Political Economy*, Vol. II—the earlier of which appeared in 1898. Although Wicksell was in agreement with the quantity theory as a long-run explanation of the price level, he was dissatisfied with important gaps in the analysis which it provided. The quantity theory was superimposed on a framework of reasoning which oversimplified the situation by implicitly assuming flexible prices and wages, otherwise the variables M , V , and T in the equation of exchange could not be considered independent. Thus, the quantity theory failed to tackle the important problem involved in price level changes—namely, that the monetary demand for goods is either too great or too small for the supply. Since this monetary demand (or monetary expenditure) is the clue to changes in the price level, Wicksell thought monetary theory should concern itself *directly* with the determinants of monetary expenditure (E). Now Wicksell's E and the MV of the quantity theory amount to the same thing; Wicksell did not claim any difference for his formulation except that it was a more precise way of viewing the determinants of the price level. For Wicksell, velocity (V) is an elusive magnitude which had no existence of its own as an economic force; we get to know V merely by the arbitrary device of dividing E by M . Since E is the important factor, the indirect method of first defining V as E/M and then using $M \cdot V$ to indicate the forces acting on the price level only beclouded the problem.

Wicksell identified E as the crucial magnitude involved. He went on to ask, What determines E and why does E fluctuate thus causing a fluctuation in the price level? The interest rate is of central importance in this problem since it embodies the exchange relation between commodities in general at two different points of time. Wicksell introduced his concept of two rates of interest which exist

in a monetary society. First there is the natural rate of interest— r —which represents the marginal increment in physical productivity of the services of land and labor when they are saved, that is, not used in providing services for immediate consumption. The natural rate of interest represents the rate of return available on real investment or, in other words, the net differential advantage in productivity which can be achieved by using an extra unit of capital. This rate is determined by the technical productivity of capital equipment in conjunction with the demand for and supply of goods which are produced by using capital.

Secondly, there is the money rate of interest— i —which is the current rate charged on loans by banks and other lenders. In the long run this rate should tend to equal the natural rate r , for if it were higher than r , borrowers would not find it feasible to borrow, thus causing i to fall, and if it were lower than r , lenders should tend to refrain from lending at i and to use their funds for direct investment on which a return of r would be available. But in the short run the rate i is determined not by the long-run real forces of productivity and thrift but by monetary forces. A plethora of money tends to force i down regardless of the level of r and stringency in the money market can cause i to rise well above r . It was among these short-run or cyclical discrepancies between r and i that Wicksell found his clue to changes in the price level.

According to Wicksell the discrepancy between r and i would originate in one of two ways:

1. If r changes but the monetary authorities fail to take action which would provide for an equal change in i .
2. If the monetary authorities permit changes in the stock of money and hence bring about change in i at a time in which r is unchanged.

However it is caused, a discrepancy between i and r will lead the economy away from a position of equilibrium. If $i < r$, the immediate result will be an increase in the value of existing real capital. Since capital values equal the discounted sums of future income, a fall in the money rate of interest i means a decrease in the rate of discount which has to be used when the future receipts expected from the real capital are added up to form capital values. The increase of capital values is merely an expression of the enhancement of profits to be derived from using more capital goods. Thus, if $i < r$ individuals and business firms will find it profitable to increase their expenditures on capital goods because the yields on investments (r) are now greater than the cost of borrowing funds (i), which are

used to finance the purchases of capital goods. The sequence of events is reversed when i exceeds r ; that is, in symbols, when $i > r$.

Although Wicksell made no attempt to develop his analysis into a fullfledged theory of cyclical fluctuations, he provided the clues from which many subsequent cycle theories developed. For example, one empirical criticism which was made of his theory was that money rates of interest are not low but high during an upswing of prices and business activity relative to the downswing phase. Wicksell himself did not provide a full reply to this question but several of his followers did. They reinterpreted r to mean not actual rates of return but *expected* rates of return on capital investment. Thus, a rise in i does not arrest an upswing of prices because r also keeps rising as producers and others made their plans around a background of optimistic buoyancy, and as long as i , no matter how high, remains below the expected rate of return (r) on investment, the expansionary forces continue.

The great weakness of Wicksell's analysis was not in its reasoning but in the great difficulty of translating the knowledge which it gave into a practical monetary policy. For r is not an observable or measurable magnitude and the task of adjusting the monetary situation so as to achieve a continuous equation between i and r is a difficult one. Wicksell himself suggested that although r itself could not be known, the price level provided an infallible guide to the policy maker. If by trial and error the monetary authorities could adjust i so as to keep the price level stable, they would at the same time have succeeded in maintaining the equality between i and r .

Critics, however (particularly Davidson),² were not long in pointing out the fallacy in the reasoning of Wicksell. Technical progress was continuously at work reducing costs of production and lowering the level of prices. The monetary authorities could maintain a stable price level only by matching the effect of improving technical conditions by an artificial increase in the money supply. But this increase would cause i to fall below r and would not therefore represent a true equilibrium. Under these circumstances the use of the price level as a criterion of equilibrium would not be justified.

However, Wicksell's work marked an important step forward in the history of monetary theory. It gave future economists several new concepts with which to fill out the skeleton provided by the quantity theory. Among these were (1) the emphasis on expenditures as the key magnitude in explaining price changes; (2) the emphasis on changes in the money rate of interest as the link between changes

² B. Thomas, "The Monetary Doctrines of Professor Davidson," *The Economic Journal* (1935), pp. 56-60.

in the stock of money and changes in expenditures; (8) the introduction of expectations as a factor in explaining cumulative movements of business activity.

Wicksell's influence, however, was not without its drawbacks. The emphasis which he placed on the rate of interest as the strategic variable initiated a tradition which for nearly forty years dominated monetary thinking. It was not until very recent years that this overemphasis has been abandoned, and with its abandonment monetary policy was freed from an exaggerated dependence on the interest rate as the prime weapon of control. Nevertheless, the persistence of Wicksell's ideas is a tribute to his stature as a pioneer.

■ HAWTREY

The basic analysis put forward by Wicksell was developed into integrated theories of cyclical fluctuations by a later generation of economists, among whom the names of R. G. Hawtrey, Friedrich A. Hayek, and John Maynard (later Lord) Keynes stand out. Of these three, Hawtrey occupies a special position in that he focused his attention, more than most economists, on the purely monetary causes of economic fluctuations.⁸

According to Hawtrey, the central figure in the economic system is the merchant or wholesaler, and the strategic factor is the influence upon the inventory policies of the wholesaler of the terms at which short-term bank loans are available. These policies depend upon two factors: (1) anticipated sales volume and prices and (2) the cost of holding goods in inventory form. The latter factor is largely a function of the cost of borrowing short-term funds—that is, the short-term rate of interest.

Hawtrey discussed the behavior of the economic system during an upward phase in the following terms. A fall in the short-term rate together with the willingness of banks to extend credit on easier terms leads wholesalers to plan increases in their inventories which they do with borrowed funds. Wholesalers' policies affect manufacturers and producers due to increased purchase orders and so stimulate them to increase output and output capacity. Attempts of manufacturers to achieve this increase in output leads in turn to increases in their purchases of labor services and of raw materials, and hence to an increase in the incomes received by the factors of production. Finally, this increase in incomes leads to an increase in the general

⁸ See his *Currency and Credit* (London, 1919; 4th ed., 1950) and *Capital and Employment* (London, 1937).

demand for consumers' goods by the recipients of this income and to an increase in the level of their spending. As a consequence of increased community spending, wholesalers find that their planned increase in inventories is not realized (because of the increased sales). Further, their anticipations with regard to future sales prospects and future prices of the goods they sell will tend to rise, thus leading them to place even larger orders with manufacturers and producers. As a result of the upward cycle of orders, production, employment, income, and spending tends to move in cumulative fashion; it is sustained throughout the rise by increases in bank lending.

The upward phase cannot, according to Hawtrey, continue forever because forces exist within the banking and monetary system which not only put an end to the rise but which bring about a reversal in its direction and so initiate the downturn of the cycle. The three important factors which are involved at this point are analyzed by Hawtrey as follows:

1. *Institutional Limits to Credit Expansion.* Under a fractional-reserve banking system credit expansion can proceed only to the point at which all excess reserves of banks have been absorbed. At this point, the banks are "loaned-up" and net new lending power is exhausted.

2. *Internal and External Cash Drains.* Throughout the upward phase of the cycle there are forces which tend to reduce bank reserves and hence tend to lower the lending capacity of the banking system. We have seen in Chapter 6 that both (a) an outflow of gold from the country and (b) an increase of currency in circulation will reduce bank reserves. With a rise in incomes and spending the community will tend to keep with them larger amounts of hand-to-hand currency. The increased demand for currency (which Hawtrey calls an internal cash drain) acts to reduce bank reserves. The external cash drain refers to the outflow of gold which is caused by the rising domestic price level; if we assume that foreign price levels are meanwhile unchanged, it will follow that there will be a reduction in foreign purchases in the domestic market and an increase of domestic purchases in the now lower-priced foreign market. Under a gold standard system this would imply a tendency for a gold outflow to take place insofar as the balance of trade is concerned. The gold export will reduce the reserves of the banking system, and consequently the banks' ability to grant loans to trade and industry.

3. *The Cash Lag.* The first two factors we have described account for the fact that there is an upper limit to the amount of credit the banking system is able to provide and hence an upper limit to the level of economic activity which can be achieved. They do not

account for the fact that having reached this upper limit, the economy tends, not to stabilize at a high level, but to reverse itself and lead to a downturn. The crucial factor, according to Hawtreys, which causes the "crises and downturn" pattern is the "principle of the cash lag." In the earlier stages of the upward phase, the major part of the increased stock of money provided by increases in bank credit takes the form of demand deposits which is the form of money used mainly in the dealings between wholesalers and manufacturers and raw material suppliers and in the sensitive security and commodity markets. It is only at the later stages of the upswing that the increase in the money stock finds its way into the hands of wage earners and retail merchants in the form of increased cash balances because of increased incomes and higher prices. This reasoning is in part verified by the well-known observation that in an upswing of business activity retail prices lag behind wholesale prices. Wage earners and retail trade merchants are typical users not of bank deposit money but of hand-to-hand currency. When the price increases affect these groups, the banking system begins to suffer a serious internal cash drain due to the demands for more hand-to-hand currency. Because of the lag factor, the internal currency drain tends to come at the time when the banking system is fully loaned-up, and hence at a time when the reduction in bank reserves caused by the drain embarrasses the banking system. The fall in their reserves leads banks to call in their loans and to make the requirements for new loans much stricter—more stringent bank lending is accomplished in part by raising short-term lending rates.

As interest rates rise sharply, the wholesalers begin to try to convert inventories into cash in order to pay off their loans to the banking system. The pressure caused by inventory liquidation causes a fall in or an anticipation of a fall in the price level. New orders to manufacturers and producers are curtailed or even discontinued. From here on the pattern of the downswing is the reverse of the upswing earlier described. Manufacturers reduce output; incomes of the factors of production fall; expenditures also decline; and wholesalers find that because of the fall in sales their attempts to reduce inventories fail. They curtail orders even further, and business activity declines further.

Throughout the downswing the same monetary forces which act during the later phases of the upswing to create a tight monetary situation begin to work in reverse. Because of the falling level of incomes and transactions, the economy no longer needs the large cash balances which it accumulated in the expansionary phase. Currency in circulation begins to return to the banking system and

hence acts to increase bank reserves. Similarly, the fall in the domestic price level (if foreign price levels do not fall as fast) tends to induce, under a gold standard, an inflow of gold resulting from the greater purchases by foreigners in the now lower-priced domestic market and the smaller purchases by the domestic economy in the now higher-priced foreign market. The inflow of gold further strengthens the reserves of the banking system. Because of the unwillingness of traders and others to borrow from the banks due to the prevalence of pessimism in the economy, the banks find themselves with redundant reserves. These factors in themselves should bring about a fall in short-term rates and a progressive easing of the terms of lending as banks compete with one another in putting their redundant reserves out on loan. In Hawtrey's opinion the increased liquidity of the banking system, which leads to an increase in its ability and willingness to make commercial loans at lower rates of interest, are sufficient to induce traders once more to plan an increase in their inventories and thus to bring about the revival of the economy.

Hawtrey's proposals for contracyclical action follow from his analysis. Instead of waiting for automatic forces to bring about the lower interest rates which are the key to a revival, he suggests swift action by the central banking authorities at an early stage of the downturn in the form of (1) a quick reduction in the rediscount rate and (2) open-market purchases, the combined effect of which should be to increase the liquidity and lending power of the banking system.

Several criticisms of Hawtrey's analysis can be made. In the first place, the entire analysis hinges on a single causal relationship—the influence of the short-term rate of interest on the decisions of businessmen. Even if this causality does exist, it is unlikely that a phenomenon as complex as the business cycle springs entirely from any single source. The work of other economists has shown the importance, for instance, of fluctuations in capital formation, wage and price relationships, and the depreciation of capital equipment during a depression, none of which play any part in Hawtrey's explanation.

Another criticism can be directed at the exaggeration in Hawtrey's analysis of the power of the interest rate as a force affecting business decisions. Wholesalers in those sectors in which the main source of trading profits are small margins combined with a high rate of inventory turnover, will not necessarily be sensitive to the changes in the rate of interest. Empirical studies⁴ also seem to indicate that

⁴ T. W. Wilson and P. W. S. Andrews (eds.), *Oxford Studies in the Price Mechanism* (London, 1951), Chap. 1.

businessmen, in making their decisions, do not pay enough attention to the level of the interest rate to make Hawtrey's theory a plausible one.

Finally, the actual evidence of a prolonged depression in the early thirties which persisted in spite of the very low levels to which the short-term rate of interest fell demonstrated that the Hawtrey analysis had exaggerated the role of the interest rate as a crucial determining factor in the economy. In a later modification of his analysis⁵ Hawtrey recognizes the limitations of the interest factor as the prime mover of the economic system and concedes that a "credit deadlock" could develop at the bottom of the cycle—in spite of the existence of low interest rates—because of the presence of other factors which his earlier analysis had overlooked.

However, although Hawtrey's analysis failed to provide a satisfactory explanation for the behavior of the economic system, it did represent a further stage in the evolution of our understanding of the interaction of monetary forces within the economy. At Cambridge, England, where Hawtrey's ideas developed, the cash-balance type of quantity theory of money was representative of current monetary thinking. In place of the static relationship which this theory envisaged between the stock of money and the price level, Hawtrey's development introduced a time sequence analysis which not only increased the number of variables under consideration but examined these variables with the aim of exposing their causal relationships with one another.

■ HAYEK

On the continent the suggestions made by Wicksell found their most important development at the hands of Hayek.⁶

The important drawback which Hayek found in the quantity theory of money and prices was that it was concerned solely with the general price level. For Hayek the clue to an understanding of economic dynamics lay not in the *general* price level but in the

⁵ *Capital and Employment* (London, 1937).

⁶ *Monetary Theory and the Trade Cycle* (London, 1933) and *Prices and Production* (London, 1931; 2d ed., 1935). Later in *Profits, Interest and Investment* (London, 1939) and *The Pure Theory of Capital* (London, 1941), Hayek has reversed some of the stands which he took in his earlier formulations. The two early works, however, are still regarded as outstanding stepping stones in the progress which monetary analysis has made in the development from the quantity theory formulation (in which the theory of money and banking was regarded as separate from the general body of economics) to the present-day treatment (in which monetary and general analysis have been fused into a single coherent body of reasoning).

relations between price levels in some segments of the economy and price levels in other segments.

Hayek conceived of a capitalist economy as a vast "production line." Only part of the productive forces (the consumers' goods industries) are engaged directly in producing final goods and services for sale to consumers. The remainder of productive activity is engaged in producing the machinery and equipment (capital goods) which is used in the production of consumers' goods. The capital goods sector can itself be subdivided into various "stages of production"—some of it being devoted to the production of machines, which produce the machines which produce consumers' goods and so on backward to activities two, three, and more "stages" removed from the consumption goods stage. The use of more and more capital in a developing economy takes the form of adding extra stages to the natural "production line" and so achieving ever greater efficiency of production. The differential advantages derived from the use of more "capitalistic" processes is a measure of the efficiency of capital and is an equivalent concept to Wickseil's natural rate of interest. The "cost" of adopting more capitalistic methods is the cost of borrowing funds, since the more capitalistic methods involve the postponement of immediate production of consumers' goods and hence involve the commitment of labor, raw materials, and effort for longer periods of time. This cost is, of course, the prevailing market rate of interest.

In equilibrium the market rate and the natural rate are equal. Monetary excesses originating from the banking system can however force the market rate of interest below the natural rate. This, of course, would mean that the "cost" of capital additions (which Hayek calls a lengthening of the production process) becomes smaller than the "premium" to be gained from the adoption of capital additions. Businessmen are thus led to borrow and to embark on the construction of capital goods. Two forces now go into action. (1) If we begin (as Hayek does) from a position in which full employment of resources exists, the capital goods industries can only expand by bidding away labor and raw materials from the consumers' goods segment of the economy. Because the construction of capital goods is clearly profitable at the existing level of interest rates, businessmen are willing to continue on their expansion plans even if the higher labor and raw material costs now mean some rises in the prices of new capital equipment. Since the banks are willing to extend credit, the capital goods industries are able to finance the expansion of their production.

(2) At the same time as the flow of consumers' goods and services

diminishes (because some of the factors previously engaged in the consumers' goods industries are drawn away into producers' goods industries), the increased spending of borrowed funds for capital goods finds its way into the hands of the recipients of wages, salaries, and rents who in turn attempt to increase their spending on consumer items.

The combined effect of the reduction in the physical supply of consumers' goods and the increase in the flow of money which the community as a whole attempts to expend on the purchase of consumers' goods leads to an increase in their prices. This increase in the prices of consumers' goods and services encourages the consumer industries to expand. In order to do so they have to bid back some of the productive factors which earlier have been bid away to the capital goods sectors of the economy. Under this pressure wages, salaries, and raw material prices go still higher.

If the capital goods industries are still able to command borrowed funds at favorable rates, they can meet the competition with which the consumers' goods industries are now bidding for factors of production. At every round of the wage-price spiral, however, the balance of bargaining power moves in favor of the consumers' goods sector. This is so because most of the increased wages and salaries earned find their way into the consumer markets and so bid up both the prices and the expectation with regard to prices of consumers' goods and services. At the same time the increased demands of the capital goods sector for more and more loans from the banking system (which are necessary to complete projects undertaken and planned during a period of lower labor and raw material costs) and from the public cause the market rate of interest to rise. Finally, interest rates as well as the prices of other factors of production rise so high that the capital goods industries can no longer compete with the growing demands of the consumers' goods sector for more labor and raw materials.

The final stage of the "boom" occurs when the banking system begins to encounter stringent barriers to further loan expansion and raises interest rates sharply. This leads to the discontinuing of a number of partly completed projects—with possibly severe losses to the entrepreneurs involved. The optimism of the boom gives way to caution and uncertainty. Meanwhile, not all the factors released by the closing down of operations in the capital goods industries can shift easily to the consumers' goods industries. For some factors the transition is easy—Hayek refers to these as "nonspecific" factors which are as easily employed in one sector as in others. But every undertaking involves a certain number of "specific" factors—skilled

labor, special machinery and tools, certain raw materials—which become unemployed. Their removal from active participation in the economy leads to a reduction of the previously strong demand for consumers' goods. At the same time the absorption of the "nonspecific" factors into the employ of the consumers' goods industries leads to an increased output of consumers' goods and services. The combined effect is a fall in prices in the consumers' goods sector, and here too optimism gives way to pessimism, with the result that these industries fail to expand (and hence to absorb the factors being released by the shrinking capital goods sector) and begin to contract, in anticipation of ever lower prices. Thus the downward spiral begins.

The cornerstone of Hayek's analysis may be stated as follows:

1. The proportion of the national activity directed toward the production of capital goods should depend on the quantity of voluntary savings available for investment.
2. Monetary disequilibrium caused by banking activity can, however, cause the money rate of interest to fall below the "neutral" rate, that is, the rate which would ensure the "correct" proportion of investment activity indicated above.
3. This brings about an increase in the proportion of national activity directed toward the production of capital goods.
4. The new ratio of capital goods production to total output cannot be maintained because the savings necessary to support the construction of the extra capital goods will not be forthcoming. Consumers will, on the contrary, expand consumption to the usual proportion, thus causing a breakdown in the attempts of the capital goods sector to maintain its expanded proportion.

As a theory of the business cycle, Hayek's theory has been subjected to numerous criticisms. We are here interested, not in his contribution to the business cycle as such, but in the monetary implications of his analysis. Two elements stand out. First, monetary disequilibrium is postulated as a prime factor in causing both the boom and its subsequent collapse. Second, and more important, is the *modus operandi* of the monetary effect. Like Wicksell and Hawtrey, Hayek is not satisfied with a direct relation between "the" price level and the quantity of money. Instead he postulates a chain reaction running from the money stock, through the interest rate, and through the effect of the interest rate on the structure of production and thence to the level of prices in the various sectors of the economy.

His conclusions with reference to contracyclical control provide new light on the criteria available for the crucial problem involved

in our thinking about monetary matters—namely, “What should the correct quantity of money be?” The cruder quantity theorists considered a stable price level as an adequate guide to monetary management. Thus, they prescribed a constant money supply (in a stationary economy) or a slowly growing money supply (in a slowly growing economy). Hayek’s reasoning drew attention to the complexities involved in monetary management. A disproportionate development is continued primarily because the money rate diverges from the “neutral” rate—and this might be due to a change in the “neutral” rate as well as to a change in the “money” rate. In other words, it is quite possible that the criterion of price stability may be a misleading one. Inappropriate monetary action might occur, for instance, if the price level is kept constant during a period of rising technological development and hence of a rising “neutral” rate. Appropriate action would call for a fall in the price level and hence for less money. Action which brings forth no fall in the price level must also imply a money rate which is lower than the “neutral” rate and will hence lead to maladjustment, overproduction, and consequent crisis. The practical importance of such a conclusion is considerable in view of the prosperity of the late twenties during which wholesale prices did not rise in spite of boom conditions.

The translation of Hayek’s analysis into positive criteria for monetary management is, however, an extremely difficult task. Even in theory, the definition of a “neutral” rate contains an element of circular reasoning insofar as no objective criteria exist which provide monetary authorities with any measure of the “proportionality” of the structure of production. In other words, it is not possible to know beforehand what the money rate of interest should be in order to be “neutral.” Thus, in spite of indicating the many reservations necessary if the “price level,” the volume of bank reserves, and the total quantity of money are to be used as criteria for monetary policy, Hayek’s analysis has provided no alternative criteria which can be applied in practice.

■ KEYNES

The most rigorous treatment of the income-expenditure analysis in terms of the relationship between money, interest, investment, savings, and price levels appeared in Keynes two-volume study *A Treatise on Money*.⁷

In an earlier work entitled *Monetary Reform*,⁸ Keynes was a pure

⁷ (London, 1931.)

⁸ (New York, 1924.)

neoclassicist. Money was treated as being "only a medium of exchange" and from this treatment followed an unambiguous exposition of the cash-balances version of the quantity theory of money.

The *Treatise* enlarged the analysis considerably. Money was treated as being not only a medium of exchange but also as a store of value—as one very important form in which the community holds its wealth. The influence of money on the economic system was examined in the light of its effect not only through its direct "quantity effect" but also through the changes it induced in the rate of interest and through this rate on the volume of investment. The *Treatise on Money* brought together in a single detailed treatment concepts from the cash-balances theory, from velocity analysis, and most important of all from Wicksell's analysis.

The core of the theoretical sections of the *Treatise* is contained in a series of explicit equations—fundamental equations, as Keynes called them—which purported to demonstrate the interrelationship between the main variables of the monetary and economic system which play a part in determining the level of prices. Like Wicksell, Hawtrey, and Hayek, Keynes centered his analysis on the flow of consumer outlay and investment outlay and the price effects of the interaction of this flow on the physical productivity of the nation. In order to isolate the channels through which monetary forces manifested themselves in the economy, Keynes adopted a particular set of definitions which he used in working with his equations.

Income Y was defined as total income receipts of all segments of the economy. This was divided into two parts, E and Q .

E = Income paid out to all factors of production including "normal" profits.

Normal profits were defined as that equilibrium level of profits which induces neither an expansion nor a reduction in the structure of firms.

Q = Windfall profits or losses.

Other definitions used by Keynes include:

O = Output as a whole in physical units consisting of $R + G$.

R = Output of consumers' goods in physical units.

G = Output of investment goods in physical units.

S = Savings.

I = Market value of new investment.

π = Price level of all goods.

Although Keynes developed several equations to describe changes in the consumer sector and the investment sector of the economy,

as well as to describe changes in the over-all price level, a development and discussion of only one equation dealing with the general price level will serve to demonstrate the main features of his analysis.

Keynes begins with the point that because money savings and money investment result from the decisions of many different individuals and groups, there is always the possibility that they will not be equal. Investment consists of the outlays of money for the purchase of capital goods and, hence, will depend on the anticipations of businessmen regarding the prospective profitability of acquiring and using these capital goods. These anticipations, in turn, depend upon a host of factors, the most important of which are (1) the gross expected rate of return on capital investment which is a function of the cost of the capital goods, the productivity of capital and the expected prices of the product to be obtained from the use of capital; (2) the cost of borrowing money funds with which to acquire the investments—this cost is, of course, the money rate of interest.

Savings, on the other hand, depend upon the individual decisions of income earners and firms. For any given situation there is a particular money rate of interest at which the total investment undertaken is just equal to the total amount of savings made available by the community. As situations change, this rate—which we shall call the equilibrium rate—undergoes a change. In practice, however, the actual prevailing money rate need not always coincide with the correct equilibrium rate for that period. If, for example, the money rate is lower than it should be (due for instance to bank policy), then investment will be higher and savings probably lower than they would have been had the equilibrium rate prevailed. It is in such a discrepancy between savings and investment that Keynes thinks the explanation of business fluctuations is to be found. In terms of the categories defined above, we can describe the situation as follows:

The total national income (Y) for any period can be looked at from three viewpoints.

1. As the money value of output, that is, $Y = \pi \cdot O$
2. As the sum total of expenditures:

that is, consumption + investment expenditures

that is, (incomes - savings) + investment

that is, $Y = (E - S) + I$

or $Y = E + (I - S)$

3. As the sum total of incomes including windfall profits or losses

$$Y = E + Q$$

From the three identities we can deduce the following:

4. From equations 2 and 3 we have

$$Q = I - S$$

5. From equations 1 and 2 we have

$$\pi \cdot O = E + (I - S)$$

$$\text{or} \quad \pi = \frac{E}{O} + \frac{I - S}{O}$$

This is the fundamental equation for the general price level. Using this equation as a framework, we can trace the effect of monetary changes on the economy. A rise in the volume of money, for example, will lead to a fall in the money rate of interest because it will tend to increase the ability and desire of the banks to lend. This fall in the interest rate produces a discrepancy between I and S , making I larger and S probably smaller. In other words, the $(I - S)$ factor becomes positive. Since as we observe in equation 4, $Q = I - S$, positive windfall profits appear. Looked at from still another angle, the price level per unit of output in equilibrium should be just equal to cost (including normal profit), that is, E/O . But due to monetary disequilibrium, it is now higher than E/O by $(I - S)/O$.

The stimulus imparted by windfall profits leads businessmen to revise their anticipations upward. Since investment depends on anticipations, business firms undertake more investment financed by credit. If factors of production are fully employed, the increased monetary demand for their services will result in a rise in E , thus contributing still more to the rise in π . But as long as I remains greater than S , Q will be positive and the stimulus to expansion will remain. The situation is reversed only when the fundamental equation is altered and I becomes less than S , thus making Q negative and initiating a downturn. This can happen in one of several ways.

1. Monetary stringency develops, and this perhaps in combination with restrictive central banking action leads to a rise in the interest rate and in the terms of long-term borrowing.

2. The increased investment which took place during the boom phase begins to be felt in an increase in physical output O , thus causing a slackening in the price rise or even bringing about a fall in prices. However, Keynes more or less disregarded the latter factor and confined himself to the short-run postulated $(I - S)$ factor as the important determinant of prices.⁹

⁹ "My so-called 'fundamental equations' were an instantaneous picture taken on the assumption of a given output." J. M. Keynes, *General Theory of Employment, Interest, and Money* (New York, 1937), p. vii.

It is interesting to compare the formulation of the *Treatise* with that of the classical quantity theory. In the transactions equation $MV = PT$ the price level P is postulated as being determined by MV/T , where V represents the average turnover of the stock of money and T represents the total physical volume of trade. As we saw in Chapter 17, most of the expenditures represented by MV consist of intrabusiness or financial transactions. Only part of this total appears as final net money income " E ." Similarly, only part of T appears as final physical output " O ." We can rearrange the transactions equation $P = MV/T$ in terms of income velocity (Vy) by substituting the appropriate output concept O in place of the trade concept T and by substituting Py , the price of final products, for P , the average price of all transactions. We then have:

$$Py = \frac{MVy}{O}$$

Since $Vy = E/M$ we can rewrite the above as follows:

$$Py = \frac{M \cdot \frac{E}{M}}{O} \quad \text{or} \quad \frac{E}{O}$$

We now have the first part of Keynes' fundamental equation for the price level of all output,

$$\pi = \frac{E}{O} + \frac{I - S}{O}$$

The Keynesian equation turns out to be the quantity theory in new form plus a dynamic Wicksell factor— $(I - S)$.

■ TOWARD KEYNES' GENERAL THEORY

The present chapter has traced the mainstream of monetary thinking as it developed during the late 1920's and early 1930's. In spite of the new insights which the more elaborate analyses introduced, economists were unable to provide a successful solution to the deep depression into which the world kept sinking during the early thirties. A quotation from Loveday's preface to the original edition of Haberler's *Prosperity and Depression*¹⁰ summarizes the situation as it then stood. "It is apparent from the persistence with which depressions occur, from the gravity of their economic and

¹⁰ G. Haberler, *Prosperity and Depression*, 1st ed. (Geneva, 1937), p. 3.

social effects, and from the growing consciousness of that gravity, that—however abundant the literature on the subject, however elaborate . . . the theories—our knowledge of the causes of depressions has not reached a stage at which measures can be designed to avert them.”

It was within this setting that Keynes wrote his *General Theory of Employment, Interest, and Money*. In it he presented a basic re-examination of the existing body of theory, discarded important elements, introduced new concepts, modified and relabeled old concepts, and combined these elements in a different manner and with different emphasis.¹¹ The “new” theoretical system has since become a basis for both analysis and policy. The book ushered in a period of bitter controversy and within the last sixteen years an enormous literature has grown up around it. It is impossible to cover even the highlights of this literature in this book. Therefore, we shall confine ourselves only to essentials, with the following questions in mind. What were the shortcomings of the pre-1936 analyses? What was the framework of the “new economics” which Keynes propounded? What principal modifications of his analysis have been made by his followers and critics? How has the new analysis been adopted for use in practical monetary policy?

In order to answer the first question, we shall have to summarize the strands of thinking developed in the previous sections of the present chapter. In our analysis so far, economic fluctuations have been thought of essentially as departures from an “equilibrium” position which can be defined as:

1. An equilibrium between savings and investment.
2. Neutrality of the money supply.
3. Equilibrium of the rate of interest.
4. Equilibrium of income.

In a static society, all four concepts imply the same thing. If the money supply is “correct,” then the money rate of interest would also be “correct” (or in other words, the money rate would be equal to the “natural” rate). From this it would follow that savings would equal investment, and income would remain in equilibrium. Looking at it from the disequilibrium point of view, we can trace a cumulative rise (fall) in income to an inequality between saving and

¹¹ For a reasoned defense of the Keynesian Revolution see L. R. Klein, *The Keynesian Revolution* (New York, 1947), especially Chaps. 1-3; also S. E. Harris (ed.), *The New Economics* (New York, 1917). For a contrary view see A. C. Pigou, *Keynes's “General Theory”* (London, 1950).

investment, which in turn is caused by the money rate of interest being different from the natural rate because of an excess or deficiency of money resulting from the operations of the banking system.

In summary, the condition of equilibrium is said to exist when the stock of money is stable; net hoarding is zero and net addition to the stock of money is zero. Income reserved from consumer expenditures is passed on through the security markets to firms that will use it for capital formation. While the diversion depresses demand and prices in the consumers' goods field, it increases demand for and prices of producers' goods. Therefore, no change takes place in the over-all average of prices. Thus, when the natural rate of interest equals the money rate, money is said to be neutral. Aggregate demand is equal to aggregate supply, and the price level and income are stable.

There were, of course, a number of minor areas of disagreement within the framework outlined above. Hawtrey, for example, emphasized the short-term interest rate, whereas Wicksell, Keynes (*Treatise on Money*), Hayek, and others believed that it was the long-term interest rate which was the crucial factor. Moreover, Hawtrey postulated that merchants' investment in inventories provided the central factor in fluctuations in economic activity; most of the others stressed the importance of investment in capital goods. There were differences too with regard to the various definitions of equilibrium. Hayek's "neutral" rate which would provide an equality of *voluntary* savings and investment was not quite the same as Wicksell's equality between the money rate and the natural rate; nor was it the same as Keynes' concept of the rate which would keep windfall profits down to zero. But, by and large, the various formulations belonged to the same *genus*, if not to the same family.

In contrast, there were some basic and irreconcilable differences. Apart from Hawtrey's purely monetary explanation of the downturn of the boom, opinions fell into two diametrically opposed schools of thought. On the one hand we had the "overinvestment" school. For this group the downturn is caused by the attempt of the community to consume too much (that is, to save too little). This drives up the rate of interest and the prices of labor and raw materials and brings about a fall in investment. In contrast, there was a current of thinking which can be called the "underconsumption" school, which would place the cause of the downturn not on "too little saving" but on "too much saving." For this group it is the failure of consumption to rise to levels sufficient to absorb the products of the

enhanced productive capacity created by the boom, which causes the downturn.¹²

The overinvestment school, which contained a much larger showing of orthodox economists in its ranks, considered the underconsumption argument to be a revival of an old fallacy and disposed of it in the following terms: Underconsumption cannot cause a downturn in economic activity for the simple reason that all savings would always find an outlet in investment activity. An excess of saving can exist only for a short period—for as soon as the capital markets react to this "excess" by a fall in the rate of interest, investment will increase and absorb the excess savings. The act of production automatically creates an income stream sufficient to absorb that production; since that income stream, if not used to buy consumption goods, will be used to buy investment goods (because the rate of interest will fluctuate so as to channel savings into investment), the aggregate demand for all goods and services will never be less than the aggregate supply at the prevailing price level.

In spite of their academic prestige,¹³ the "overinvestment" theories lost ground to the "underconsumptionist" arguments in the practical world of policy—a world which was faced by the paradox of "poverty in the midst of plenty" and the insistent fact that all sectors of the economy were working at less than full capacity because total effective monetary demand was deficient.

For Keynes, who always had an eye for practical matters, the clue lay somewhere within our understanding of savings, investment, consumption, and income, and it was around these categories that he constructed the core of his theory. In his re-examination of the basic postulates of orthodox analysis, an important empirical fact was involved. This was the existence in Britain, throughout the twenties, of a continuous and sizable volume of unemployment. Until 1930 there had existed some hope that the unemployment was a "temporary" phenomenon—a departure from equilibrium which would eventually be corrected. The onset of the deeper depression of the thirties indicated that this was not so. In contrast with the thirties, the decade of the twenties came to be looked upon as the now lost "normal state of affairs," the restoration of which became the cardi-

¹² Lionel Robbins, "Consumption and the Trade Cycle," *Economica* (November 1932), p. 427, contrasts the two views as follows: "On Hobson's view we starve in the midst of plenty because we do not demand enough; on the view I have suggested we starve because we seek to pluck the fruits of prosperity before they are ripe."

¹³ For example Haberler in reviewing the underconsumption theories says of them, "It is difficult to summarize these theories because, with some notable exceptions, their scientific standard is lower than the standard of those reviewed earlier in this volume." *Prosperity and Depression*, 3d ed. (New York, 1946), p. 119.

nal aim of policy. The depression of the thirties introduced an important new question—Could equilibrium and unemployment of resources coexist? Previous thinking had assumed that they could not; it was believed that given flexible prices and wages, equilibrium and full employment of resources were synonymous; within this framework, the question which had been asked in formulating monetary analysis had been: "What causes fluctuations around equilibrium?" In the *General Theory* Keynes was driven back to ask more fundamental questions: "What are the forces which determine the level of income, output, and employment? Could these forces result in an equilibrium at less than full employment?"

This reformulation of the basic problems at issue also implied a serious change in approach. The theories which we have been considering thus far implicitly assumed that the level of output is something that is fixed in the short run and that changes in the price level are the sole cause of changes in the level of income. Our thinking on this problem required amendment to include output as one of the most important variables in the economic system. In other words, a theory of output needed to be developed, and this theory had to be integrated with monetary theory as a whole.

A quotation from Keynes' preface to his *General Theory of Employment, Interest, and Money*¹⁴ summarizes the issue:

When I began to write my *Treatise on Money* I was still moving along the traditional lines of regarding the influence of money as something so to speak separate from the general theory of supply and demand. When I finished it, I had made some progress towards pushing monetary theory back to becoming a theory of output as a whole. But my lack of emancipation from preconceived ideas showed itself in what now seems to me to be the outstanding fault of the theoretical parts of that work . . . , that I failed to deal thoroughly with the effects of changes in the level of output. My so-called "fundamental equations" were an instantaneous picture taken on the assumption of a given output. They attempted to show how, assuming the given output, forces could develop which involved a profit disequilibrium, and thus required a change in the level of output. But the dynamic development, as distinct from the instantaneous picture, was left incomplete and extremely confused. This book, on the other hand, has evolved with what is primarily a study of the forces which determine changes in the scale of output and employment as a whole. . . .

¹⁴ Pp. vi ff.

QUESTIONS AND PROBLEMS

1. a. During the course of the business cycle "most of the time, P and T are active factors in the equation of exchange; they bring about changes in M' , V and V'' ; to a less extent they affect even M ." (W. C. Mitchell, *Business Cycles*, New York, 1927, p. 130.) Explain.
 b. Why did price inflation occur during both World Wars, and by what means? Is the quantity theory adequate to explain it?
2. Is the problem to which the quantity theorists addressed themselves the same as that considered by the writers discussed in this chapter? Indicate points of similarity and difference.
3. Do you regard as dynamic and not static:
 a. The theories discussed in this chapter?
 b. The quantity theory?
4. a. What is the "common core" of doctrine among the writers considered in this chapter?
 b. What are the most significant differences?
5. Compare the way in which the level of commodity prices is determined according to:
 a. The quantity theory as formulated by Irving Fisher.
 b. The quantity theory as formulated by the Cambridge school.
 c. Wicksell's theory of the aggregate demand and the aggregate supply of commodities and the relation between the money and the natural rate of interest.
 Indicate points of agreement and disagreement among these explanations.
6. a. Hawtrey has been termed an uncompromising advocate of the purely monetary theory of the business cycle. Explain why.
 b. What role does the interest rate play in his analysis?
 c. Does his analysis throw any light on the general level of prices?
7. Does the "neutral money" doctrine of Hayek carry any implication as to the importance and nature of the interest rate in credit control?
8. a. Wherein do Keynes Fundamental Equations differ from the Fisher and Cambridge forms of the Equation of Exchange?
 b. Evaluate their usefulness in explaining alterations in the volume of output and income, business activity, and prices.

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CHAPTER 19

The Modern Theory of Income Determination

IN THIS and the succeeding chapter we shall explore what is frequently described as the "modern theory of income analysis." The purpose of this and the following chapter is to examine the process by which changes in the level of economic activity take place and its implications for monetary policy.

The present chapter outlines the framework on which income analysis rests. The discussion proceeds in two sections.

1. The classical argument postulated that fluctuations in the rate of interest ensured that savings and investment would move into equality with one another and thereby bring the economic system into a position of equilibrium. The "modern" analysis proposes instead a "theory of effective demand" in which consumption and investment determine the level of income; savings and investment are brought into equality not by changes in the rate of interest but by fluctuations in the level of income. The first part of the analysis includes:
 - a. The definition of savings and investment.
 - b. The concept of the propensity to consume.
 - c. The multiplier and its operation.
2. The second section outlines the liquidity-preference theory of interest. The classical argument about the equality of savings and investment was based on the classical theory of interest; the

two arguments stand together. In rejecting either, Keynes had to reject both. He replaced the classical theory of interest with a purely monetary theory which has come to be known as the "liquidity-preference theory."

In the succeeding chapter the determinants of investment are explored and the theory of effective demand is developed to provide an over-all analysis of the forces determining the level of income. We conclude by examining the implications of the analysis for monetary and fiscal policy.

■ SAVINGS, INVESTMENT AND INCOME

SAVING = INVESTMENT

It should be clear that the expenditure and receipt sides of GNP must be equal. This equality is true in the same sense that debits must equal credits in any consistent system of double-entry bookkeeping. Thus, the difference between GNP and private consumption measures the amount of investment [gross private investment (I_p), net foreign investment (I_f) and government purchases of goods and services¹ (I_g)]. We can state this in another way. The difference between GNP and consumption measures the amount of gross saving plus taxes minus transfer payments.

The value of the national product for any period is equal to the total amount of money spent by the community during that period on consumption goods and services plus the amount spent on capital goods (including net additions to the value of inventories held), on net foreign investment, and expenditures by the government.

In symbols

$$Y = C + I \quad (1)$$

During the same period, the value of the national product Y is also the total income (including business profits and tax payments to the government) received by all sectors of the economy. The income received by the community is disposed of in one of two ways: (a) part of it is expended on consumption, and (b) the remainder is saved.

In symbols

$$Y = C + S \quad (2)$$

Since Y and C are identical magnitudes in the equations (1) and (2) it follows that in any period,

$$S = I$$

¹The government can spend money either on providing goods and services for current consumption by the community or on providing goods that are added to the stock of capital in the country

Since students frequently have difficulty in understanding the definitional equality of S and I , we shall explain this equality in another way by referring to actual economic processes. Let us assume a closed economy—that is, an economy that has no contact with foreign countries. Net investment for any period refers to the net additions made to the stock of goods in a country between the time the period begins and ends (for example, in a year). During that period net savings is equal to the total obtained by adding the savings of many household and business units in that country; some units will dissave (have negative savings), while others will have positive savings.

The net savings of the household and business units can take one of three forms:

1. Money.
2. Claims on other people such as securities, promissory notes, accounts receivable.
3. Physical goods such as machines, houses, cars, clothes.

But money is either a physical good (gold, silver, etc.) or a claim (bank note or demand deposit). Therefore, savings which take the form of money can be put into category 2 or 3. We are left with only two categories. Claims, in turn, are debts owed by one person or institution to another. For the *community as a whole* new claims must cancel one another; what is a liability to one is an asset to another. Thus, net savings can only take the form of net additions to the nation's stock of goods. But this is precisely what investment means. Thus, the two magnitudes (savings and investment) are identical.

THE CONSUMPTION FUNCTION

The level of income and employment at any time depends upon the amount of spending on currently produced goods and services. As we saw in Chapter 16, total spending on current output is made up of consumer expenditures, gross private investment, net foreign investment and government purchases of goods and services. By far the largest fraction of spending on current output consists of consumption expenditures. These expenditures and gross private investment represent spending by the private sectors of the economy. We turn next to the factors influencing consumption.

The propensity to consume (consumption function) is the function that relates consumption and income. Figure 32 portrays some of the possible relations between consumption and income. In terms

of the diagram the consumption function is the entire C curve with a definite position and slope. The vertical scale measures consumption and the horizontal scale measures the level of income. Any variants of national income enumerated in Chapter 16 can be used. The precise nature of the consumption-income relationship obviously depends on the particular variant of income we use. In our discussion we shall deal mainly with the consumption-national income relationship in general.

The consumption function expresses the relationship between consumption and income at different levels of income at a given time on the assumption that all other things remain unchanged. The conviction is growing that the consumption function is capable of substantial instability. Thus, assuming the same level of income, the consumption function may rise or fall depending upon the distribution of income, the size of the population, the relative amounts of liquid asset holding, the behavior of the price level, the availability of consumer credit, changes in expectation about future availability of goods, future incomes, or future prices. Recent studies indicate that we should expect considerable variation in the way consumption responds to short-period changes in income.

The Average Propensity to Consume The concept of the average propensity to consume refers to the ratio of consumption to income or C/Y . The average propensity to consume is a single point on the C curve. If, for example, GNP is \$300 billion and consumption expenditure is \$240 billion, the average propensity to consume is .8 of income at \$300 billion of income.

The Marginal Propensity to Consume We are interested not only in the ratio of consumption to income but also in the relation between the change in consumption (ΔC) which is associated with any given change in income (ΔY). This ratio $\Delta C/\Delta Y$ we call the marginal propensity to consume. Thus, if income increased by \$5 billion (ΔY) and consumption by \$4 billion the marginal propensity to consume is .8.

In Figure 32 the OZ line is drawn at 45° to the base line OY . If C always equaled Y , the relationship C/Y would fall along the OZ line showing a 1 to 1 relationship between C and Y . This point may be restated as follows: If the community consumed its entire output, at any point on the OZ line consumption equals income. If income is OH , a level of consumption equal to income would be OV (or AH). The average propensity to consume would always be 1 (or 100 percent). If we compare changes in consumption with changes in income, we find that for every increase in income of one dollar there is an increase of consumption by one dollar.

Casual observation would support the thesis that consumption is seldom equal to total income. Savings and taxes keep consumer expenditures below the level of total income. The relationship between consumption and income is highly complex. One possibility is illustrated by the consumption function OC . As income rises, consumption varies directly by a constant amount, but it does not rise as rapidly as income. The consumption function is below the

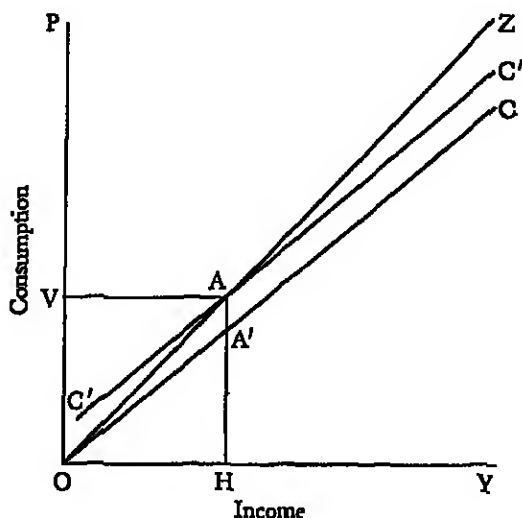


FIGURE 32

OZ line and for any point on the OC line (for example, A') the distance $A'H$ to the horizontal axis is then 80 percent of the distance OH to the vertical axis. In other words, the consumption function (OC) has a slope of .8. The marginal propensity to consume is less than 1. In the case of OC the marginal propensity to consume ($\Delta C/\Delta Y$) is .8 at all levels of income. For every increase in income of \$10, consumption increases by \$8. Since this is true at all levels of income, the marginal propensity to consume is constant and equal to .8. The average propensity to consume will be constant and equal to the marginal propensity to consume if the consumption function is a straight line which passes through the origin.² In order to have

² Geometrically, for a straight-line consumption function that cuts the vertical axis of OP and the line OZ above zero, the average propensity to consume will be declining, since to the left of the point of intersection with OZ savings are negative—consumption exceeds income—and to the right of the point of intersection with OZ savings are positive, that is, consumption now is less than income,

such a consumption function, consumption must be zero when income is zero.

In the world around us consumption is more than income at the lowest levels of income. At higher income levels consumption rises but not as fast as the increase in income. Thus, in Figure 32 the consumption function $C'C'$ seems to be in closer accord with the facts of life than does the curve OC . For all incomes from zero to OH the ratio of consumption to income is greater than 1 since the consumption function lies above OZ . At income H consumption is equal to income, the average propensity to consume is 1 and there are no savings. For all levels of income above H consumption increases but not as rapidly as income; since the ratio of consumption to income falls as income rises, positive savings increase. The *absolute* amount of savings increases rapidly.

As we saw earlier, the marginal propensity to consume is always measured by the slope of the consumption function. Since $C'C'$ is a straight line, the marginal propensity to consume is the same for all levels of income. We have drawn it parallel to OC so that the marginal propensity to consume is the same—.8. However, the average propensity to consume falls as income increases even though the marginal propensity to consume is constant. This is always true when the consumption function with a slope of less than 1 intersects the 45° line to the right of the origin.

THE RELATIONSHIP OF INCOME, INVESTMENT AND SAVING

For purposes of exposition the specific position and slope of the consumption function need not concern us. As long as the average propensity to consume is less than 1, we have positive saving. The act of saving represents a diversion of the flow of spending for current output of goods and services. Unless the saving is restored to the income stream, the volume of income—representing aggregate spending—will be reduced. The consumption function states how large the diversion from current spending will be as income changes, and thus it tells us how large investment must be to maintain aggregate demand consistent with each level of income.

If the horizontal axis in Figure 32 represents disposable income of individuals, the only diversion from income is personal savings. For markets to be self-balancing government expenditure plus net private investment must equal the sum of taxes plus saving. If we use GNP as our measure of income, the diversions from income include all forms of business and personal saving and all taxes.

This point can be illustrated by referring to Figure 33. As in our

previous diagram, along the OZ line the level of income as recorded on the horizontal axis (income) is exactly equal to the sum of the vertical distances representing the amount of consumption and investment expenditures that people are willing to make. At income OH consumption is equal to $A'H$. Unless investment equal to $A'A$ is forthcoming, total spending will not be equal to OH and therefore income equal to OH cannot be attained.

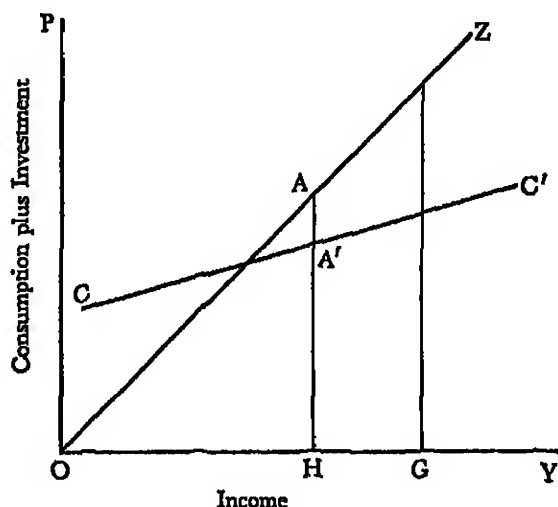


FIGURE 33

We can formulate the relation between income, investment, and consumption as follows: *If the level of investment is taken as given*, the level of income (hence of output and employment) is uniquely determined by the propensity to consume and that level of investment. In other words, given the propensity to consume, there exists for any given level of investment one and only one equilibrium level of income. We can illustrate this point by assuming that the consumption function is .8 and that the level of investment is \$20 billion in a given period. The equilibrium level of income in that period will be \$100 billion. The explanation is as follows:

From our national income accounting we know that $Y = C + I$. We are told that:

- a. Consumption = $.8Y$
- b. Investment is \$20 billion

We can substitute $.8Y$ for C in equation $Y = C + I$, and we can substitute \$20 billion for I . Thus we have:

$$Y = .8Y + \$20 \text{ billion}$$

$$.2Y = \$20 \text{ billion}^*$$

$$Y = 5 \cdot \$20 \text{ billion}$$

$$Y = \$100 \text{ billion}$$

In order to explain the notion of an equilibrium level of income we must digress briefly to explain the difference between anticipated or planned (ex-ante) expenditures and realized (ex-post) expenditures. The national income data refer to realized or ex-post magnitudes. By the very nature of double-entry accounting the diversion from current spending resulting from saving must be equal to the sum of realized investment. Since the ex-post accounts deal with actual events the books must balance if they are drawn up correctly. The fact that ex-post savings equal investments does not imply equilibrium or stability in the level of economic activity.

While the ex-post magnitude savings and investment must be equal there is no need for planned (ex-ante) savings to equal planned (ex-ante) investment since the decisions to save are made by one group—consuming units—and decisions to invest are made by an entirely different group—business firms.

An equilibrium situation exists when realized savings are equal to planned savings, when realized investment equals planned investment, and when planned savings and planned investment equal realized savings and realized investment.

Our previous illustration represents an equilibrium situation with respect to economic activity. The community planned to save \$20 billion out of an anticipated income of \$100 billion and its ex-post savings are equal to its ex-ante savings. Moreover, business firms planned to invest \$20 billion, and their plans were realized. Thus, \$100 billion is an equilibrium level of income, and total spending is sufficient to maintain the level of income until something happens to change the amount of consumption or investment.

If the volume of realized saving differs from the volume of planned saving and if realized investment differs from planned investment, expectations of consumers or businessmen or both will not be realized, and this will lead to changed plans for spending in subsequent periods. To illustrate this point we shall assume as before that consumers plan to spend .8 of a \$100 billion income and business firms plan to invest \$20 billion. Now we shall assume that consumers actually spend \$90 billion. Since there has been no change in the production of consumers' goods, the attempts of con-

* The simple algebra is $1.0Y - .8Y = \$20 \text{ billion}$. $.2Y = \$20 \text{ billion}$ can be rewritten $\frac{1}{5}Y = \$20 \text{ billion}$. Multiplying both sides by 5 we get $Y = 5 \cdot \$20 \text{ billion}$.

sumers to spend an additional \$10 billion on consumption can be satisfied only:

1. By allowing inventories of retailers and wholesalers to fall. If this happens, we have net disinvestment of \$10 billion as far as inventories are concerned. Total investment is no longer \$20 billion but \$10 billion (the original \$20 billion less the \$10 billion of inventory disinvestment). Thus, S (\$10 billion) = I (\$10 billion). The situation is now:

$$\begin{aligned} Y &= C + I \\ \$100 \text{ billion} &= \$90 \text{ billion} + \$10 \text{ billion} \\ S &= I \\ \$10 \text{ billion} &= \$10 \text{ billion} \end{aligned}$$

2. If retailers and wholesalers refuse to or cannot reduce the size of their inventories then the increased pressure of \$10 billion resulting from the community's action to reduce the level of savings will result in a rise in prices. Thus, income ($Y = C + I$) will rise to \$110 billion since C is \$90 billion and I remains unchanged at the assumed level of \$20 billion. \$10 billion of this income goes to merchants in the form of windfall profits resulting from the price rise. Since they do not spend this additional income, savings are still \$20 billion ($S = Y - C = \$110 \text{ billion} - \90 billion) despite the action of consumers to reduce the level of savings. The situation is now:

$$\begin{aligned} Y &= C + I \\ \$110 \text{ billion} &= \$90 \text{ billion} + \$20 \text{ billion} \\ S &= I \\ \$20 \text{ billion} &= \$20 \text{ billion} \end{aligned}$$

In neither case do we have an equilibrium level of income although savings ex-post equals investment ex-post. In the first case, realized investment is smaller than planned investment, and businessmen will expand their investments in the next period, thereby increasing income. In the second case, income has risen, but since consumers ex-post spent $\frac{9}{10}$ of their income, they spent more than their planned fraction $\frac{8}{10}$ of income. They will reduce their consumption in the next period, and income will fall. As long as consumers plan to spend $\frac{8}{10}$ of their income and business firms plan to invest \$20 billion, the equilibrium level of income is \$100 billion. This is the only income at which planned savings and realized savings are equal and at which planned investment and realized investment are equal.

The equilibrium level of income may not be a level in which there is full employment of our labor force.⁴ If an equilibrium situation exists, planned and realized savings are equal, and planned and realized investment are equal. If there are no forces to change these plans and their realization, there need be no change in the level of income (and economic activity). Yet this level may not provide full employment. We can illustrate this condition by reference to Figure 33. If we assume a full-employment level of income is OG and that the actual level of income OH is an equilibrium one, income need not change from OH unless the propensity to consume or the level of investment changes. Thus we have an equilibrium level of income OH which is not a full-employment level of income.

If the consumption function remains .8 and investment increases from \$20 billion to \$30 billion, we can ascertain the new equilibrium level of income with a few simple arithmetic calculations. Since we have $Y = C + I$ and we are told $C = .8Y$ and I is \$30 billion, we solve for Y and discover it is \$150.⁵ We can easily test to see if \$150 billion is an equilibrium level of income. C is (.8 Y or) \$120 billion and investment is \$30 billion. Planned savings (\$30 billion) equals realized savings (\$30 billion) and planned investment (\$30 billion) equals realized investment (\$30 billion). Thus income can permanently be maintained at the equilibrium level—where the amount of saving that people want to do is matched by the amount of investment that businessmen are willing to maintain. Saving and investment are brought into balance over time by the equilibrating mechanism of income.

THE MULTIPLIER

We were able to ascertain the equilibrium level of income in the preceding section by making the oversimplified assumption that the average propensity to consume is constant (that is, .8 Y). As we saw earlier, a more realistic view of the world would show a declining average propensity to consume (CC' in Figure 33), as income rises.

⁴ By full employment we refer to a situation in which people currently employed do not on the whole desire to engage in more work at current rates of remuneration. Moreover, the people who are not currently employed must be able to anticipate being employed within a relatively short time at occupations which utilize their skills and in working conditions approximately equal to those at present prevailing in these occupations.

⁵ $Y = C + I$ and $C = .8Y$, $I = \$30$ billion

Thus

$$\begin{aligned} Y &= .8Y + \$30 \text{ billion} \\ \frac{1}{2}Y &= \$30 \text{ billion} \\ Y &= \$150 \text{ billion} \end{aligned}$$

Instead of our simple statement that the average propensity to consume (C/Y) is a constant we must revise our statement to read that C/Y declines as income rises and vice versa. By dropping the assumption of a constant average propensity to consume, we can no longer compute the equilibrium level of income to which the economy will move in the simple manner which we previously employed. Since C/Y is not constant but varies with income, we cannot know the average propensity to consume appropriate to the new level of income unless we already know the new level of income itself. But we are trying to find the new level of income!

If the average propensity to consume is not constant but falls as income rises, we must know how C/Y changes with changes in income if we are to find the new level of income resulting from an increase in investment (I). An increase in I of \$10 billion will increase income. In order to find the new equilibrium resulting from this rise in I , we must know how the average propensity to consume changes as income changes.

We can look at this problem in another way. If we study the increment in income (ΔY), we shall observe that the manner in which it is distributed between an increment in consumption (ΔC) and an increment in savings (ΔS) does not correspond to the way in which income (Y) has previously been divided between consumption (C) and savings (S). In other words, the marginal propensity to consume ($\Delta C/\Delta Y$) is not equal to the average propensity to consume (C/Y). If C/Y falls as income rises it must mean that $\Delta C/\Delta Y$ is less than C/Y . In order to know the value of the average propensity to consume (C/Y) for any *new* level of income we must first know the value of the marginal propensity to consume ($\Delta C/\Delta Y$).

It should be clear that the marginal propensity to consume is important to our system of income determination. If we know the value of ($\Delta C/\Delta Y$), we can solve our problem of determining the new equilibrium level of income when investment changes. If consumption decreased by an amount equal to added investment, total income would remain constant. If added investment increases income, consumption cannot have declined. Therefore, the added investment must be financed by the creation of new money or an increase in the income velocity (V_y) of the existing stock of money.

The increased income resulting from the added investment sets up a series of secondary events. Thus, a \$10 billion increase in investment does not result in a mere \$10 billion increase in income. As income increases, consumption increases, thereby leading to a further increase in income which in turn leads to a further increase in consumption and so on. This process is not endless. If the marginal

TABLE 51

THE MULTIPLIER WHEN THE MARGINAL PROPENSITY TO CONSUME IS ONE HALF

Period	Increase in investment over period 0 levels	Increase in consumption			Total rise in consumption over period 0 levels	Total rise in investment and consumption over period 0 levels
1	\$10				\$5.00	\$15.00
2	10	\$5			7.50	17.50
3	10	5	\$2.5		8.75	18.75
4	10	5	2.5	\$1.25	9.375	19.375
5	10	5	2.5	1.25	9.687	19.687
6	10	5	2.5	1.25	9.843	19.843
7	10	5	2.5	1.25	9.921	19.921
8	10	5	2.5	1.25	9.960	19.960
9	10	5	2.5	1.25	9.980	19.980
10	10	5	2.5	1.25	9.990	19.990
11	10	5	2.5	1.25	9.995	19.995
12	10	5	2.5	1.25	9.997	19.997
13	10	5	2.5	1.25	9.998	19.998
14	10	5	2.5	1.25	9.999	19.999
15	10	5	2.5	1.25	9.999	19.999

propensity to consume is .5, only one half of each increment to income will be returned to the spending stream by consumption.

Assuming a marginal propensity to consume of .5 and an addition to investment of \$10, the process of expansion in money income is illustrated in Table 51. From this table it is clear that money income in period 1 is \$10 higher than in period 0. In period 2, however, money income increases another \$5 because of the induced increase in consumer spending. In period 3 consumption and money income rise another \$2.50 because of the induced increase in consumption and money income in period 2. The chain of secondary consumption spending set up by the \$10 of investment spending turns out to be a dwindling chain which adds up to a finite amount. This problem is similar to one we met in ascertaining the ultimate limits of deposit expansion in Chapter 6. There, the volume of new deposits was determined by the formula for an infinite (diminishing) geometric progression $[1/(1 - R)]$ where R was the required reserve. The multiplier which tells how large an increase in income will be associated with an increase in investment (ΔI) can be ascertained by the same formula $[1/(1 - R)]$ where R is the marginal propensity to consume.⁶ Thus the multiplier (k) is

$$\frac{1}{1 - \text{the marginal propensity to consume}}$$

In our illustration the marginal propensity to consume is .5 and the multiplier is 2. An increment to investment of \$10 leads to a \$20 rise in income. As can be seen in Table 51 expansion in money

⁶ Assume I increased from \$20 to \$30. The increment to investment (ΔI) is \$10. The problem is to find out by how much income will rise. We want to know the value of the new equilibrium level of income stemming from the change in I (ΔI).

$$\Delta I = \Delta Y - \Delta C$$

(Since we know the increment of income will be divided somehow between consumption and investment.)

$$\therefore \Delta I = \Delta Y - \Delta C$$

(dividing both sides of this equation by ΔY)

$$\therefore \frac{\Delta I}{\Delta Y} = \frac{\Delta Y}{\Delta Y} - \frac{\Delta C}{\Delta Y} = 1 - \frac{\Delta C}{\Delta Y}$$

(the reciprocal of $\frac{\Delta I}{\Delta Y}$ is $\frac{\Delta Y}{\Delta I}$)

$$\therefore \frac{\Delta Y}{\Delta I} = \frac{1}{1 - \frac{\Delta C}{\Delta Y}}$$

(multiplying both sides of the equation by ΔI)

[Continued on next page.]

income continues until money income is \$20 greater than in period 0. \$10 of this increase is due to the increment in investment and \$10 is due to the induced consumption.

The change in income is always a certain multiple k of the change in investment. The multiple k is called the *multiplier* and its value depends on the marginal propensity to consume ($\Delta C/\Delta Y$). *The larger the marginal propensity to consume the larger the multiplier; the smaller the marginal propensity to consume the smaller the multiplier.*[†]

Thus far we have assumed that the increase in investment is a "one-shot" affair. But we know that as income increases, business firms' expectations become more favorable and investment plans are revised upward. Thus, the rise in consumption gives rise to new investment. The ratio between a net change in consumption outlays and induced investment is called the acceleration coefficient. For example, if we find that a net increase of \$5 billion in consumption leads to net investment of \$10 billion, the acceleration coefficient is 2.

The acceleration principle may be illustrated by a simple example. Suppose that 100 units of capital equipment is needed to maintain a constant flow of 1,000 consumers' goods. If this capital equipment wears out in 10 years, each year 10 units must be replaced. Let us

$$\therefore \Delta Y = \Delta I \cdot \frac{1}{1 - \frac{\Delta C}{\Delta Y}}$$

Let us substitute k for $\frac{1}{1 - \frac{\Delta C}{\Delta Y}}$

then

$$\Delta Y = k \cdot \Delta I$$

From this relationship we observe that the change in income (ΔY) will be equal to k times the change in investment (ΔI); k is equal to

$$\frac{1}{1 - \frac{\Delta C}{\Delta Y}} \quad \text{or} \quad \frac{1}{1 - \text{the marginal propensity to consume}}$$

The marginal propensity to save is 1 minus the marginal propensity to consume. If the marginal propensity to consume is .9, the marginal propensity to save is $1 - .9$ or .1. Thus the multiplier k is the reciprocal of 1 minus the marginal propensity to consume or the reciprocal of the marginal propensity to save.

[†] For example:

$$k = \frac{1}{1 - \frac{\Delta C}{\Delta Y}}$$

$$\frac{\Delta C}{\Delta Y} = \frac{2}{3}$$

$$\frac{\Delta C}{\Delta Y} = \frac{1}{2}$$

$$k = \frac{1}{1 - \frac{2}{3}} = \frac{1}{\frac{1}{3}} = 3$$

$$k = \frac{1}{1 - \frac{1}{2}} = \frac{1}{\frac{1}{2}} = 2$$

assume that the acceleration coefficient is 1. In other words a 10-percent increase in consumption from 1,000 to 1,100 calls for a 10-unit increase in the production of capital goods in addition to the normal replacement of 10 units each year—a total of 20 new capital goods. The operation of the acceleration principle is shown in Table 52. A 10-percent increase in the rate of consumption calls

TABLE 52
ACCELERATION EFFECTS ON INVESTMENT

Period	Consumption	Capital equip- ment	Investment			% Change in investment
			Additions	Replacement	Total	
0	1,000	100	0	10	10	.....
1	1,100	110	10	10	20	+100
2	1,100	110	0	10	10	-50

for a 100-percent increase in the production of new capital goods including the normal replacements of 10 units, making total gross investment 20 according to the assumed acceleration coefficient of 1. The important thing to observe is the 100-percent increase in investment resulting from a 10-percent increase in consumption. When consumption remains constant, investment falls 50 percent. Thus, changes in the rate of consumption give rise to magnified changes in investment, according to the acceleration principle.

The interaction of the multiplier and the acceleration principle provides a tool for measuring the induced investments which result from increases in consumption from one period to the next. The process is shown in Table 53. It is noteworthy that after the third period the total increase in consumption is too small to induce a favorable change in investment. A total increase of \$50 in investment has given rise to total increases in national income of \$148.125, or almost 3 times the initial outlays of \$50. The results would be very different if we assumed a different marginal propensity to consume and a different acceleration coefficient.

While the multiplier is a useful tool for analyzing the effects upon income of a change in investment, the practical application of this concept is limited by the assumption of a constant marginal propensity to consume. Considerable variation in relationship between consumption and income may take place in the short run. Moreover, the same practical limitation arises in connection with the acceleration coefficient.

TABLE 53

MULTIPLIER AND ACCELERATION EFFECTS ON INCOME

Period	Initial outlay	Induced consumption	Induced investment	Total increase in national income
1	\$10	\$ 0.00	\$ 0.00	\$10.00
2	10	5.00	10.00	25.00
3	10	12.50	15.00	37.50
4	10	18.75	12.50	41.25
5	10	20.625	8.75	34.375

Assumptions: 1. Marginal propensity to consume = .5
 2. Acceleration coefficient = 2

■ THE KEYNESIAN THEORY OF INTEREST

CLASSICAL AND NEOCLASSICAL POSITION

The classicists did not devote much attention to effective demand or what determines the level of income. The reason for lack of any concerted attention to that problem is no doubt explained by the classical theory of interest which we outlined earlier.⁸ According to that theory, the rate of interest is determined by the demand for and supply of real capital. In the classical view, the demand for capital is a function of the productivity of capital; the supply of capital is a function of thrift or abstention from consuming current output.

The rate of interest was a safety valve, in effect, which ensured that

1. The level of saving would be equal to the level of investment (and)
2. Total effective demand (that is, the combined demand for goods and services for consumption and for investment) would always clear the market of output produced.

To the classical formulation (which we shall call the "real" theory of interest) neoclassical analysis added two factors.

1. The effect of purely monetary forces on the rate of interest. In other words, the effect on interest rates of increases or decreases in the stock of money brought about by a fractional reserve banking system.

⁸ See Chapter 17.

2. The effect on interest rates of the desire to hoard (that is, hold) money, whether cash or demand deposits.

According to neoclassical theory, the rate of interest cannot be explained solely by the interaction of the demand for saving (that is, investment) and the supply of saving (that is, thrift). For one thing there is no such thing as a market for saving or a price for saving. What we do have is a market for loans or credit, and the rate of interest is the price paid for borrowing loanable funds. The supply of loanable funds is not quite the same as the supply of saving; for, in addition to saving, two other factors must be taken into account before arriving at the total available flow of loanable funds. These are (1) changes in the quantity of money resulting from loans extended by the banking system and (2) changes in the community's hoards of money (that is, saving which is not available for lending).

The innovation introduced by the neoclassical or "loanable-funds" theory of interest can be illustrated in another way. If the banking system cannot create money but merely transfers the savings (income minus consumption) from one individual to another and if there were no hoarding,⁹ then the supply of loanable funds would be equal to the volume of goods and services which were produced and not consumed during a given period. The money rate of interest would equal the real rate of interest.

The classical theory of interest postulated that the rate of interest is determined solely by the schedules of investment and saving, or in symbols

$$i = f(I, S)$$

In contrast the loanable-funds theory of interest said that the rate of interest is determined not only by the schedule of savings and investment but also by changes in the volume of money (M) and changes in the desire to hoard (H); in symbols

$$i = f(I, S, M, H)$$

For the "real" theory of interest, when saving equals investment ($S = I$), we have an equilibrium position of both the rate of interest and the over-all effective demand and supply relations. In other words, when $S = I$, the aggregate demand for goods and services will clear the market of goods and services produced. If I and S were not equal, the rate of interest would change until I and S were made equal. If investment were to exceed savings, the rate of interest would rise causing investment to fall and savings to increase; the

⁹By hoarding we mean the demand for cash balances.

rate of interest would continue to fluctuate until $I = S$. On the other hand, if investment were less than savings the interest rate would fall causing investment to rise and savings to fall; the interest rate would cease to fluctuate when $I = S$.

According to the loanable-funds theory, the rate of interest is determined not only by saving and investment but also by the two additional factors, M (changes in the quantity of money) and H (changes in the desire to hoard). Because M and H are factors which affect the rate of interest, it does not always settle at the point where I and S are equal; the interest rate does not automatically assure that saving and investment will be equal. Thus, it was the change in the exposition of interest theory which enabled the neoclassicists to develop the theory of economic fluctuations (changes in the price level and in the level of income in the short run) which was outlined in the preceding chapter.

The changes in interest theory resulting from the introduction of the M and H factors as they affect interest rates did not involve a basic change in the formulation of the "real" rate of interest. Rather, it represented an evolution of classical interest theory. The introduction of the monetary factor (M) was not a new idea. Earlier writers had not completely disregarded the effect of M on the rate of interest. They recognized that a change in the quantity of money, *in the short run*, would change the pattern of relationships among prices of various goods. Since interest was considered a price, the classicists recognized that a change in the quantity of money might affect interest rates relative to other prices. They assumed, however, that *in the long run*, relationships among prices were determined by real forces lying behind the supply of and demand for goods. Thus, a change in the quantity of money would affect the absolute level of all prices; the prices of all goods would maintain the same relationship to one another that existed before the change in the quantity of money and in the general price level.

The neoclassical formulation of interest theory represented largely a change in emphasis. In the "loanable-funds" theory of interest, saving and investment continued to be the dominant forces. The emphasis, however, was changed from concern with long-run forces affecting economic life to a consideration of the short-run factors affecting the level of prices and income associated with business cycles.

The introduction of the hoarding factor, H , did not represent a basic change in the content of interest theory. The classical writers were not unaware of the existence of hoarding. They considered its effects as negligible. They were of the opinion that the bulk of so-

ciety was concerned with maximizing its income. Since there were rewards—in the form of interest—for lending, few people would care to hoard. They therefore reasoned that the volume of hoarding was small and the effect of changes in the demand was negligible. Neo-classical theory, in contrast, gave hoarding explicit mention in the formulation of interest theory. Apart from this formal recognition, the hoarding element was not given much greater causal weight in the neoclassical analysis than it had received at the hands of earlier writers.

THE KEYNES APPROACH

In contrast with the neoclassical developments, the theory of interest put forward by Keynes represented a radical departure from previous analysis. He rejected the "real" theory of interest as fallacious. It will be recalled that according to the most common version of the "real" theory, the rate of interest was determined by the relation of the supply schedule of capital (which shows the amounts which would be saved at various assumed levels of interest) and the demand schedule (which showed the amounts which would be invested at various hypothetical levels of interest).

Keynes criticized this formulation on two grounds. In the first place, he argued that the level of saving was dependent only to a small extent on the level of interest rates; the most important factor affecting the level of saving, in his view, was the level of income. Because the classical analysis had not included the income factor explicitly, it suffered a serious omission. In the second, and more important place, classical analysis could not be amended to include the income factor because it suffered from a basic logical flaw which Keynes explained in the following manner.

Since the level of saving depends largely on the level of income, and since the level of income depends largely on the level of investment, the saving schedule itself depends on the level of investment. In other words, saving and investment are not two independent variables, the interaction of which can be said to determine the interest rate but are instead two interdependent variables which cannot, therefore, furnish material for a theory of the rate of interest. We can state this in another way. The classical assumption of full employment (the level of income is constant) is inconsistent with its assumption that changes in the investment schedule and/or the savings schedule bring about changes in the rate of interest. If either schedule changes (that is, investment or saving) income must

change.¹⁰ According to Keynes, it is the change in the level of income and not change in the rate of interest which brings savings and investment into equilibrium.

Keynes filled the gap left by his rejection of the classical theory of interest by formulating a purely monetary theory of interest. In it he argued that the rate of interest is the resultant of two factors —(1) the stock of money and (2) what he called "the schedule of liquidity preference." Of course, both these factors had been included in the neoclassical developments of interest theory. The main areas of difference between Keynes' liquidity-preference theory and the "loanable-funds account" were twofold. First, whereas neoclassical theory had retained saving and investment as determining factors, Keynes omitted them completely from his theory of interest. Second, the hoarding element which played only a minor role in neoclassical analysis was developed as the central factor in Keynes' theory in the form of his liquidity-preference schedule.

Like hoarding, the concept of liquidity preference refers to the aggregate desire of individuals to hold part of their assets in the form of cash (currency and demand deposits) rather than in the form of interest-bearing securities or other evidences of debt. But, whereas hoarding had been regarded as a more or less irrational impulse which could be neglected in monetary economics, Keynes analyzed the demand for liquidity as a highly rational and very important variable in the economic system.

According to Keynes, the advantage of keeping all one's wealth in interest-bearing form is offset by two important disadvantages:

1. Interest-bearing instruments are less "liquid" than cash.
2. The value of interest-bearing instruments is not fixed (except at some future date when the bond comes due) but varies from month to month, from week to week and from day to day. A general rise in interest rates always means a fall in the market value of any particular bond. Thus, interest-bearing instruments can often be a source of loss to a holder since a decline in their market value can exceed the small gains in interest derived from holding bonds instead of holding cash.

Because of these factors it may very well be more rational to "hoard" (hold money) than to "lend" in certain situations. (One such case would occur when the individual expects to have the opportunity for a good "buy" in the future. Rather than hold a bond in the interim, he would prefer to hold his wealth in the most

¹⁰ See preceding section of this chapter starting on page 517.

liquid and readily available form—that is, cash. Also, if the individual expected interest rates to rise in the future he would prefer to hold cash rather than to hold a bond, the market value of which can be expected to fall as interest rates rise. Furthermore, in situations of great uncertainty the community as a whole would attempt to increase the fraction of its wealth held in liquid form.) As opposed to the advantages of having liquidity, there is the disadvantage of the interest which is foregone in order to hold cash.

Taking all these factors into consideration, Keynes postulated

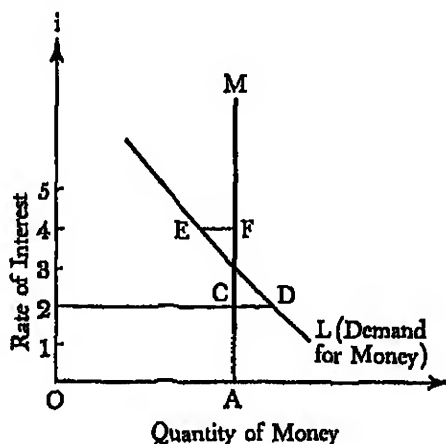


FIGURE 34

that the demand schedule for cash, that is, of liquidity preference, at various levels of interest would look somewhat as in Figure 34. The reasons Keynes gave for the negative slope of this curve were twofold. For one thing, the higher the level of interest rates, the greater is the sacrifice involved in holding cash and the smaller will be the demand for cash. For another thing, the lower the level of the interest rate, the greater will be the expectations that it will rise and therefore the greater will be the desire to hold cash.

In Keynesian reasoning, the curve of liquidity preference showing the amounts of cash desired by the public at various levels of interest rates forms the *demand side of the interest equation*. This demand, in conjunction with the given supply of money determines the level of the interest rate.

For any given liquidity-preference curve there is one and only one rate of interest at which the demand for (*L*) and supply of cash (*M*) will be equilibrated. In Figure 34 the equilibrium rate is 3 percent. The reasoning here follows the usual analysis of supply

and demand relationships. At rates lower than 3 percent the demand for money exceeds the available supply; when the rate of interest is 2 percent, the demand for money exceeds the stock of money by *CD*. The community as a whole will therefore attempt to convert their noncash assets (that is, interest-bearing securities) into cash. The general attempt to unload securities will cause security prices to fall and their effective yields to rise. Since the interest rate must be equal to the effective yields available on existing securities of the same type, the fall in security prices is tantamount to a rise in interest rates. Interest rates will continue to rise (security prices will fall) until they reach 3 percent at which point the supply of money is equal to the demand for money. Conversely, at rates higher than 3 percent the process would be reversed. For example, at 4 percent, the supply of money exceeds the demand by *EF*. Since the community's desire to hold cash would be less than the supply of cash, it would attempt to get rid of its excess cash holdings by purchasing securities. The concerted purchase of securities for cash would cause prices of interest-bearing obligations to rise and their effective yields to fall. Purchases of securities would continue until interest rates fell to 3 percent at which point the supply of and demand for cash are equilibrated.

IMPLICATIONS OF LIQUIDITY PREFERENCE

Before concluding this chapter it would be well to explore two highly significant implications of the liquidity-preference theory. Both implications have given rise to a good deal of theoretical controversy. We shall confine our discussion to the main threads of these disputes in the two sections which follow.

The Interest-Elasticity of Liquidity Preference The first important implication of the Keynesian theory of interest concerns the effect of changes in the stock of money on the level of the interest rate. According to neoclassical analysis an increase in the quantity of money always causes a fall in the rate of interest. According to Keynes, the effect of a change in the quantity of money on the interest rate will depend on the nature of the liquidity-preference schedule.

Parts A and B of Figure 35 show two possible types of liquidity-preference curves. In Part A the demand schedule for cash which is shown depends to only a very small extent on the level of the interest rate. A change in the interest rate from 2 percent to 1 percent is associated with a small increase in the demand for cash from *OA* to *OB*. The liquidity demand is insensitive to changes in the interest

rate; the liquidity curve is interest-inelastic. In Part B the opposite situation is portrayed; the liquidity curve is sensitive to changes in the interest rate. A change in interest rate from 2 percent to 1 percent induces a large increase in the community demand for cash from *OC* to *OD*; the liquidity curve is highly interest-elastic.

It would be possible to depict in diagrams many types of possible liquidity-preference schedules; we shall, however, show only three more. In Part A of Figure 36 the liquidity-preference curve shown has a zero elasticity; the demand for money shows no variation

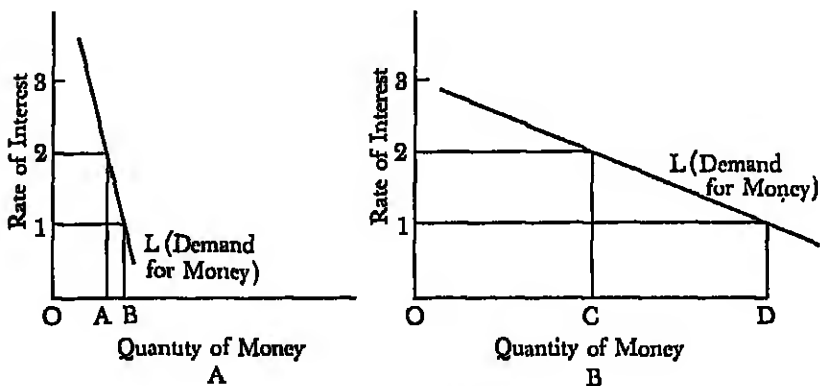


FIGURE 35

despite changes in the interest rate. Part B portrays a liquidity-preference curve with infinite elasticity. People will be willing to hold in cash form all increases in money the banking system is able and willing to provide. Looked at in another way an infinitely elastic liquidity curve implies that the slightest fall in the rate of interest will be accompanied by an enormous (infinite) increase in the quantity of cash demanded by the public. The liquidity-preference curve in Part C illustrates a combination of elasticities. Between *W* and *X* the demand for liquidity has virtually zero elasticity; between *X* and *Y*, it is fairly elastic; beyond *Y* and moving toward *Z*, elasticity increases until it becomes almost infinite. A number of writers suggested on the basis of a priori reasoning that this would represent the most likely shape of the liquidity schedule. The reasoning can be outlined as follows. At very low levels of interest rate, expectations will be almost universally held that the rate of interest cannot fall further and that the only possible change is upward. Since the expectations of a rise in the rate of interest is tantamount to an expectation of a *fall* in the price of interest-bearing securities, there

will be a great desire at very low levels of the interest rate to hold cash rather than noncash assets.

The probable effects of an increase in the stock of money under various assumptions about the interest-elasticity of the schedule of liquidity are summarized in Parts A, B, and C of Figure 37. The

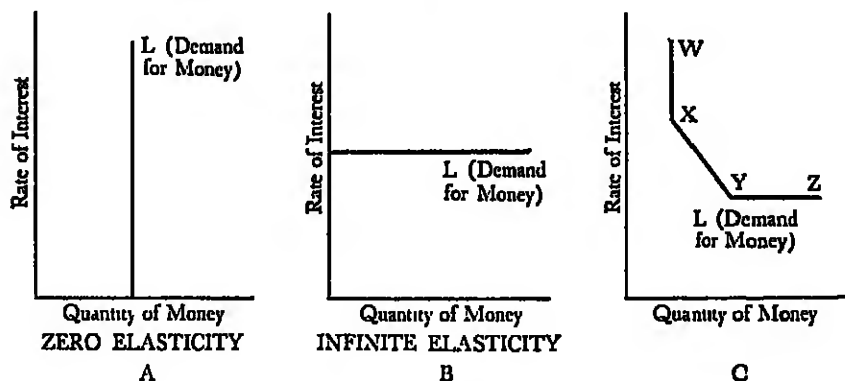


FIGURE 36

more elastic the liquidity schedule, the smaller will be the effects on the level of interest rates of a given rise in the money supply. In all the diagrams there is an equal change in the money stock from OA to OB . In Part A which portrays an inelastic liquidity

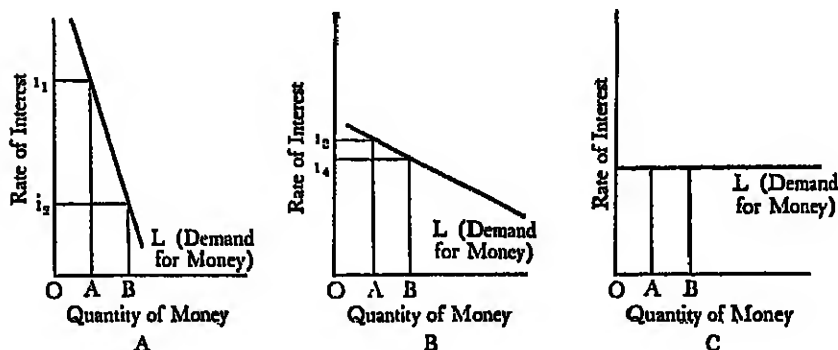


FIGURE 37

schedule, the fall in the interest rate from i_1 to i_2 is very much greater than the fall from i_3 to i_4 which takes place in Part B (where we have an elastic liquidity schedule). In the last diagram showing an infinitely elastic liquidity schedule, the change in the money stock results in no change at all in the rate of interest.

At the risk of repetition, it will be useful to contrast pre-Keynesian thinking on the factors affecting the interest rate. According to the "real" theories, changes in saving and/or investment directly affect the rate of interest; it is changes in the interest rate and not changes in the level of income which bring about equilibrium between the new level of savings and the new level of investment. In the neo-classical system, changes in saving and/or investment change both the level of income and the rate of interest. Changes in both income and the rate of interest bring about equilibrium between the new level of saving and the new level of investment.

Thus, as far as the relationships between changes in income and in the interest rate and the equilibrium of saving and investment, the neoclassical version represents a synthesis between the "real" theory and the Keynesian analysis. In the controversy which has followed the publication of Keynes' *General Theory*, it has become apparent that the Keynesian analysis as outlined above represented an oversimplification of the relationships involved. As amended in order to correct its omissions, the neo-Keynesian version is virtually identical with the "loanable-funds" formulation of interest. In order to explain the amendments to the original version of Keynes' theory of interest, it will be necessary to digress briefly to examine the concept of the *demand for money*.

The demand for money is a demand for liquidity. Keynes distinguished three separate motives which lead people to hold money; they are (1) the transactions motive, (2) the precautionary motive, and (3) the speculative motive.

The *transactions motive* for holding cash refers to the need of households and business units to hold sufficient money to bridge the gap between periodic receipts and payments. The amount of cash needed to meet the transactions motive depends on such factors as Fisher lists in his discussion of velocity.¹¹ The transactions motive for holding cash depends directly on the level of income. The *precautionary motive* for holding money arises because individuals and business firms find it good practice to hold a reserve against contingencies that may or may not occur at some future date. The demand for money for contingencies varies with the nature of the emergency envisaged; this demand is very sensitive to anticipations of the level of income. The *speculative motive* for holding money arises from uncertainty about the future rate of interest (or in other words, the price of interest-bearing securities). Thus, if interest rates are high (security prices are low), the individual is likely to anticipate a rise in security prices (or a fall in interest rates) and hence

¹¹ See Chapter 17.

will not hold much money for speculative purposes but will prefer to hold securities and profit from the anticipated rise in security prices. If interest rates are low (security prices high), the individual will anticipate a decline in security prices (rise in interest rates) and will therefore hold cash rather than securities.

In our analysis thus far we have assumed that the demand for money consists solely of the speculative motive for holding money. The transactions motive and the precautionary motive for holding money have little relationship to the level of interest rates and are quite separate from the concept of liquidity preference proper (the *speculative motive* for holding money).

Therefore, we shall distinguish between *liquidity proper*, which refers to the desire to hold wealth in the form of money rather than in any other form, and the *transactions motive*, which refers to the need to hold part of one's income flow in readily spendable form. It is quite possible to argue that the two motives overlap or that it is impossible in practice to separate, statistically, money held for transactions purposes and money held to satisfy the liquidity motive proper. It is, however, pedagogically sound to keep separate these two motives for holding money.

We have the total demand for money consisting of two parts (1) a transactions demand for money which we shall call L_T and (2) a liquidity-preference demand which we shall call L_L . We have already shown that L_L depends on the level of the interest rate. L_T depends on the level of income; just as an individual tends to hold more money when his income and the price level rises, so too does the nation as a whole desire more money to carry out its transactions at higher levels of prices and national income.

With this background we can return to our problem of how changes in productivity and thrift (investment and savings) do affect the rate of interest. Since changes in investment and/or the propensity to save change the level of income, they also bring about a change in the transaction demand for money L_T . If L_T changes, L_L remaining the same, the total demand for money must change. If the total demand for money changes, and the stock of money remains the same, then the rate of interest must change. This can be illustrated arithmetically. Let $L_T = \$100$ billion and $L_L = \$50$ billion and the money stock = \$150 billion. Assume that income increases due to an increase in investment or to a decrease in the propensity to save. At the new higher income $L_T = \$125$ and L_L remains the same at \$50. Assuming the money stock constant at \$150, the demand for money for liquidity (\$50) is greater than the supply of money (\$25) to satisfy this desire. In consequence, the interest rate will rise

until L_L equals the stock of money for purposes of liquidity.

It should be apparent now that a change in the level of investment and/or the propensity to save changes *both income and the rate of interest*. This amended version of the Keynesian theory of interest amounts to the same thing as the loanable-funds, or neoclassical, account of the determinants of the interest rate, and, of course, thereby, the relationship between saving and investment and the level of income.

QUESTIONS AND PROBLEMS

1. Why did the analysis in Keynes' *General Theory* not appear until the 1930's, although by the end of the nineteenth century many economists had detected weak spots in the quantity theory analysis?
2. a. Explain why, by definition, savings equal investment in the Keynesian system. How is the identity preserved over the course of the business cycle?
b. Some prefer to say, instead, that savings plus taxes plus consumption equal investment plus government spending plus consumption. Explain in what way this might be regarded as an improvement.
3. a. What factors may change the marginal and the average propensities to consume over the course of the business cycle?
b. Over the longer run or secular period?
4. "Many expositions of Keynesian views place great emphasis on the 'multiplier' which connects the difference between two under-employment-equilibrium levels of income and the corresponding difference in investment or government deficit (the 'consumption function' being unchanged between the two). To me this concept is an analytical fifth wheel; the exposition is simpler if it is avoided and the whole argument is stated in other terms." (A. G. Hart, *Money, Debt and Economic Activity*, New York, 1948, p. 190.) Evaluate.
5. a. Evaluate the role of interest in Keynes' analysis.
b. Does the existence of "near money" affect the validity of Keynes' view of interest?
6. Assume a constant marginal propensity to consume of .5 and a constant induced investment in relation to the net increase in consumption expenditures of 2.
a. Work out for each of the first six periods the change for each period and the cumulative changes in income, consumption, savings and investment, if there is an injection of \$100 million in the form of public works.
b. How much additional income must be injected in the fifth and in the sixth periods to keep the level of consumption constant?

SELECTED REFERENCES

See close of Chapter 20 for references to both chapters.

CHAPTER 20

Income and Employment

THE previous chapter has dealt with two important segments of income analysis. We discussed two questions:

1. Given the level of investment, how is the level of income determined?
2. What forces determine the level of the interest rate?

The first two sections of the present chapter complete the analysis. We shall discuss two issues.

1. What forces determine the level of investment?
2. How do the variables which we have discussed separately fit together within the system as a whole?

■ THE DETERMINANTS OF THE LEVEL OF INVESTMENT

CLASSES OF INVESTMENT

The total amount of employment and income is dependent upon the amount of spending for goods and services produced. As we saw in Chapter 19, GNP is the sum of consumption expenditures (C), gross private investment (I_p), net foreign investment (I_f), and government purchases of goods and services (I_g). The factors affecting consumption expenditures were discussed in that chapter. In this chapter we shall discuss the remaining components of the GNP; first and most important of all—domestic private investment I_p ; second, foreign investment I_f ; and third, government purchases of goods and services I_g .

Domestic private investment—or the expenditure on nonconsumer goods by nongovernmental sectors of the economy—has already played a part in the preceding analysis. Before discussing it further, however, it will be convenient to describe the two other categories.

Foreign investment is best defined as the excess of exports of goods and services over the import of goods and services. If imports exceed exports, foreign investment is negative. Looked at another way, net foreign investment is equal to the monetary demand for domestic goods by foreigners which is not balanced by an equal supply of foreign goods. Like private investment, this excess demand from abroad implies a demand for domestic factors of production financed by borrowed funds. For, if the goods and services exported are not paid for wholly by those imported, the balance must be settled by a "promise to pay"—that is, out of borrowed funds or by using past accumulations to pay for the net goods and services bought.¹ While changes in foreign investment can sometimes be of great importance to the behavior of variables within the domestic economy, in the United States they are as a rule of minor importance relative to domestic private investment and government purchases of goods and services. The magnitude of foreign investment depends to such an extent on changes outside the domestic economy that we shall exclude them from the present analysis.²

Government purchases of goods and services. Through its taxing instruments government can affect the volume of consumption expenditures and the level of gross private investment and thereby can alter the volume of employment and income. Through its expenditure policies the government can increase or decrease the demand for certain kinds of goods and services, thus increasing or decreasing income and employment. Government expenditure taken by itself and disregarding taxes has an income-creating effect; conversely, decreases in expenditures tend to reduce income. Government expenditure—ignoring taxes—has a multiplier effect upon income just like that of private investment. The explanation lies in the chain of consumption responses which is set into motion by the people who receive the income initially from the government when it purchases goods and services. It must be remembered that the federal government is not the only source of government expenditure but that state and local governments also expend large sums of money for goods and services.

¹ It should be noted that to the extent that exports are financed by government gifts and loans they are not included in net foreign investment but are included in the figure for government purchases of goods and services.

² See Chapters 21 and 22 for a discussion of the problems arising out of changes in foreign investment.

Domestic Private Investment Total private (nongovernmental) domestic expenditure on output consists of two categories—consumption expenditures and nonconsumption expenditures, which we call private domestic investment. Generally, there is no great difficulty in separating consumption expenditures from investment expenditures. Such items as producer capital goods, expenditures on plant and equipment of business enterprises, on stocks or inventories of raw materials, semifinished or finished goods are clearly investment goods. So also are new commercial buildings. It is when we try to categorize consumer capital goods that we run into difficulty. Consumer purchases of new residential housing are always regarded as investment expenditures. But consumer purchases of other durable items are classified as consumption expenditures. In other words, we draw an arbitrary line: housing expenditures are investment; others are consumption.

Another way of achieving a clear-cut division would be to classify as investment all expenditures out of borrowed funds or out of accumulated savings and to classify as consumption all expenditures out of income. The difficulty with this method would be that a substantial amount of spending which is clearly consumption by any common-sense standard takes place out of borrowed funds or by drawing down past savings—and to classify this as investment could be misleading. Nor would we be free from drawing further arbitrary distinctions even if we could carry out the suggested distinction as statistical practice. We shall, therefore, retain the customary definition of domestic private investment as the total purchases by businesses and individuals of newly produced capital goods, that is, of plant, equipment, inventories, nonresidential and residential housing.

THE MARGINAL EFFICIENCY OF CAPITAL

Our present problem is to analyze the determinants of the level of investment. Here again we can dispose of the *I_g* (government purchases) and the *I_f* (foreign investment) factors in a brief paragraph. Government expenditure is determined by administrative and legislative decisions. Government expenditures can be increased or decreased depending upon whether the government wishes to exert an expansive or contractive influence upon the level of employment and income.

Foreign investment depends on the relation between imports and exports. Both factors are a function of the general framework of international trade—that is to say, of relative price levels, tariffs, and

transportation costs. Imports tend to vary directly with the level of total domestic income and the level of domestic prices. Exports tend to vary directly with the level of income abroad and with the level of foreign prices.

Domestic private investment, which is by far the most important segment of total investment, depends on the net profitability of capital formation. For any given item of investment, that is, for any given addition to plant and equipment, there must exist a certain anticipated rate of return. These expected future returns can be thought of as a stream of net expected revenue directly attributable to the new investment. Net expected revenue is itself equal to the gross expected stream less depreciation allowances, maintenance costs and other costs of operating the new equipment. Now, the net expected stream of revenue from a capital asset and the present cost of acquiring that capital asset are the two factors which determine the "rate of return" available on an increment of capital. The easiest way in which this "rate of return" can be expressed as a simple numerical value is to find that rate of discount which makes the *present* value of the expected *future* stream of revenue exactly equal to the cost of the asset. Keynes called this rate the *marginal efficiency of capital*.⁸ The concept is similar to the Wicksellian natural rate of interest, or to the common-sense concept of a rate of return on capital, or to the marginal productivity of capital. The only difference is Keynes' explicit emphasis on the fact that the future revenue stream is an *anticipated* or *expected* stream, hence that the marginal efficiency of capital depends not only on technological factors but on the optimism or pessimism with which businesses view the future.

The concept of marginal efficiency summarizes in one number the advantage, so to speak, which accompanies the use of an investment of capital. Against this advantage, the businessman must weigh a negative factor, that is, the cost of having money tied up in the venture for a considerable period of time. If he borrows the funds with which to purchase the capital equipment then his cost will be equal to the rate of interest which he has to pay on the borrowed funds. If he uses his own savings, he sacrifices the interest which he could have gained by lending his money out at the going rate of interest. In either case, the "cost" of making the investment is equal

⁸ The definition of the marginal efficiency of capital as the rate of discount which makes the present value of the net expected revenue on an investment of capital exactly equal to its cost is best illustrated by means of a numerical example. Let us take a piece of machinery which now costs \$4,450. The purchaser expects it to last for 5 years during which the net revenue will be \$1,000 each year. This \$1,000 is after allowance for maintenance and the cost of running the equipment but before deprecia-

to the prevailing rate of interest. Whether the decision to invest will be made, will depend on the relation between the marginal efficiency of capital and the prevailing rate of interest. As long as the marginal efficiency is higher than the rate of interest, investments will be made. In other words, the level of investment is determined by two factors—the marginal efficiency of capital and the rate of interest. Given marginal efficiency, investment will be stimulated by a fall in the rate of interest; given the rate of interest, investment will be stimulated by a rise in marginal efficiency. Conversely, a rise in the rate of interest or a fall in the marginal efficiency of capital will cause investment to fall.

Before we leave the subject of the marginal efficiency of capital, it will be useful to summarize briefly the various factors which influence its magnitude. One dominating factor is the state of business confidence. When anticipations in general are high, expected revenues are estimated generously and marginal efficiency rises. A

tion In other words, the \$1,000 per year represents both the recovery of and the return on the investment. We now have:

- a. Present cost—\$4,450
- b. Expected net revenue stream—\$1,000 (1st year)
 \$1,000 (2nd year)
 \$1,000 (3rd year)
 \$1,000 (4th year)
 \$1,000 (5th year)

The present value of this expected stream will depend upon the rate of discount we choose. At a 4-percent rate it will be as follows:

\$1,000 one year hence is worth	$\frac{\$1,000}{1.04}$	now
\$1,000 two years hence is worth	$\frac{\$1,000}{(1.04)^2}$	now
\$1,000 three years hence is worth	$\frac{\$1,000}{(1.04)^3}$	now
\$1,000 four years hence is worth	$\frac{\$1,000}{(1.04)^4}$	now
\$1,000 five years hence is worth	$\frac{\$1,000}{(1.04)^5}$	now

$$\text{Total present value} = \frac{\$1,000}{1.04} + \frac{\$1,000}{(1.04)^2} + \frac{\$1,000}{(1.04)^3} + \frac{\$1,000}{(1.04)^4} + \frac{\$1,000}{(1.04)^5}$$

Since we have defined marginal efficiency as the rate which makes the total present value equal the cost, i.e., \$4,450, we have

$$\$4,450 = \frac{\$1,000}{1+R} + \frac{\$1,000}{(1+R)^2} + \frac{\$1,000}{(1+R)^3} + \frac{\$1,000}{(1+R)^4} + \frac{\$1,000}{(1+R)^5}$$

where R is the marginal efficiency of capital. Solving for R , we discover it is 4 percent.

pessimistic outlook, on the other hand, leads to very conservative and cautious estimates of future revenues and marginal efficiency falls. But although they dominate the investment picture, the anticipation factors are only mirrors which distort certain underlying factors which must also be considered. These are the basic technological coefficients.

The differential productivity for the use of capital depends basically on three important facts: (1) The quantity of capital goods already in existence. The greater the amount of equipment already in use, the smaller the differential advantage from using more of the same equipment. This factor explains why capitalistic methods are so much more obviously productive in the underdeveloped regions of the world than in the highly developed areas. (2) Changes brought about by innovation due to the application of new technological discoveries. In a sense this factor is already implied in our first factor, for innovations provide new areas in which a large quantity of capital equipment does not exist, and hence make for a high marginal efficiency. (3) The rate of growth of demand for consumers' goods. This factor is, in turn, closely linked with the rate of population growth. The increasing demand for consumers' goods calls for an increase in equipment and machinery with which to meet that demand. More people mean more houses, more clothes, etc., which means more construction, more clothing factories, etc.

Some authors choose to differentiate between a "widening" of capital, that is, multiplication of the number of already existing types of capital instruments, and a "deepening" of capital, that is, construction of new forms of capital equipment. Population growth, for example, leads to a "widening" of capital, whereas innovations usually lead to a "deepening" of capital as manufacturing processes get more complicated.

In addition to the anticipation element and to the technological factors which we have just analyzed, there is a third set of factors which have a strong influence on the level of investment. This is the level and structure of the tax system. Since the significant way to figure expected returns from investment projects is to figure them after taxes, high tax rates or anticipation of higher taxes reduce the marginal efficiency of capital because taxes are part of the cost of doing business. Any tax which changes the "cost" of doing business affects the marginal efficiency of capital and hence the level of investment.

THE INVESTMENT SCHEDULE

Since the level of investment depends on the relation between the marginal efficiency of capital and the rate of interest, we can draw up a schedule showing the various amounts of investment which will occur at various levels of the interest rate under conditions in which the marginal efficiency of capital is taken as fixed. For, if we take given conditions as far as marginal efficiency is concerned, a fall in the rate of interest makes investment projects profitable which hitherto have not been feasible. Thus, the curve showing the relation between levels of investment at various levels of the rate of interest will slope downward in much the same way as an ordinary demand curve.

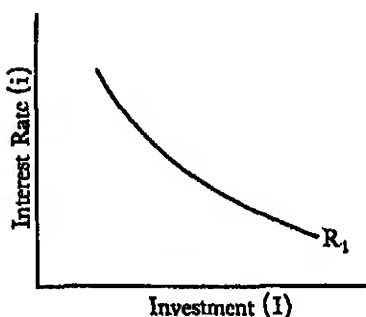


FIGURE 38

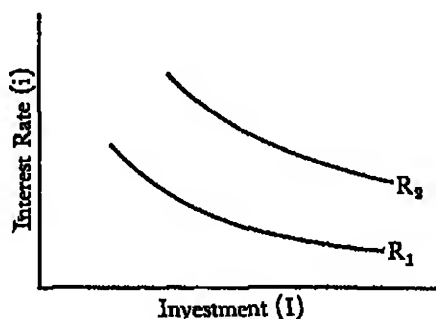


FIGURE 39

In Figure 38 the vertical axis represents various hypothetical levels of the interest rate, and the horizontal axis indicates the various levels of investment appropriate to each level of the interest rate. The curve slopes downward from left to right because at lower rates of interest more investment will take place for any given conditions of the marginal efficiency of capital. It must be noted that all parts of the curve R_1 refer to a single given level of marginal efficiency. If we were to include *changes* in the marginal efficiency we would have to draw a new curve R_2 . In Figure 39, a second curve R_2 shows the relation between interest and investment under a second set of conditions with regard to the marginal efficiency of capital. The curve R_2 refers to a higher level of marginal efficiency due either to higher anticipation, or to changed technological conditions which render incremental uses of capital more profitable.

The relation between the change in the interest rate and the change in investment which it induces is given by the shape of the R curves. In certain circumstances a given change in the rate of

interest induces relatively large changes in the level of investment. Figure 40 depicts such a situation and the investment schedule is said to be interest-elastic.

Under other circumstances a given change in the rate of interest has only a negligible effect on the level of investment. In such circumstances, the schedule of investment is highly inelastic with

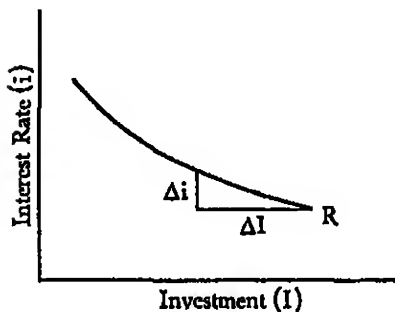


FIGURE 40

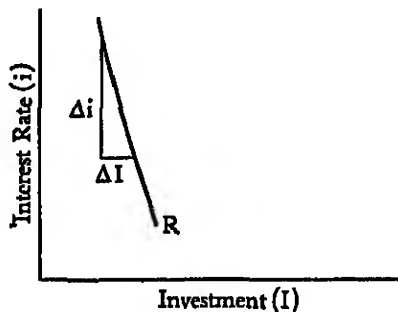


FIGURE 41

respect to changes in the interest rate. Figure 41 illustrates such a case.

The degree of elasticity of the investment schedule becomes highly important when we come to talk about the probable effect of changes in the rate of interest on the volume of investment.

■ MONEY AND THE ECONOMIC SYSTEM

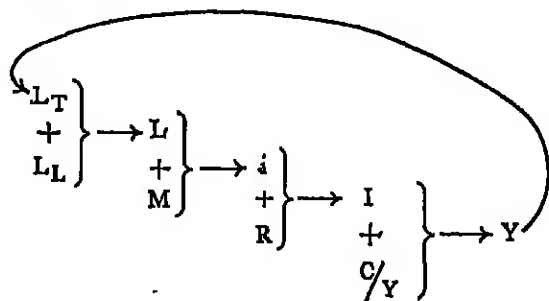
Our final task is to bring together the various elements which we have analyzed in this and the preceding chapter and to trace thereby the effect of monetary factors on the economy as a whole. We have noted that:

1. The level of income determines the demand for liquidity for transactions purposes. The transactions demand for money in conjunction with liquidity-preference proper determines the total demand for liquidity.
2. The total demand for liquidity (liquidity-preference proper plus the transactions demand for money) and the supply of money determine the level of the rate of interest.
3. The rate of interest in conjunction with the marginal efficiency of capital determines the level of investment.
4. The level of investment in conjunction with the consumption function determines the level of income.

From these relationships we conclude we have a mutually interdependent system in which the level of income (Y), the rate of interest (i), the level of investment (I), and the level of savings (S) are determined by four important factors:

1. The quantity of money (M).
2. The schedule of liquidity preference (L), including both L_T and L_L .
3. The consumption function (C/Y).
4. The marginal efficiency of capital (R).

For convenience, we can outline the various channels of causality in the following diagram:



The arrows indicate the causal determination. The four basic factors are the elements, L_L , M , R and C/Y . The four determinants of the system are L_T , i , I (and S) and Y .

Given the framework outlined above, we can evaluate the probable effects of changes in the monetary factor M . For purposes of brevity in exposition our arguments will consider only *increases* in the money stock. For *decreases* in the stock of money the same reasoning would apply except that the process is reversed.

According to the rigid interpretation of the income-velocity version of the quantity theory of money, the level of income⁴ was a function of (1) the quantity of money M and (2) the income velocity of money, V_y . Thus, $Y = MV_y$. Since the V_y element was regarded as a highly stable factor, it was reasoned that an increase in the quantity of money must increase the level of money income. In other words, it was believed that the central banking authorities could control the level of money income by controlling the stock of money.

⁴ Actually the quantity theories analyzed the money value of income (Y) as consisting of two component elements $Y = PO$, where P is the general price level and O is the physical volume of output. Since O was generally regarded as constant in the short run, the quantity theories traced the effects of changes in the money supply not on Y but only on the P element.

Neoclassical analysis introduced one further step in this framework by developing the point that an increase in the money stock must lower the rate of interest. The new, lower rate of interest in conjunction with a given marginal efficiency of capital would lead to an increase in investment and the latter in turn would bring about a rise in the level of income.

Modern income analysis introduces other qualifications into the causal relationship between the money supply and the level of income. We shall now trace these qualifications.

Money and Interest An increase in the stock of money will lower the rate of interest only if:

1. Liquidity preference does not meanwhile shift upward, and
2. The schedule of liquidity preference is relatively inelastic. If the schedule of liquidity preference is infinitely elastic, no amount of new money will lead to a decline in the rate of interest.

Thus, in modern analysis, the liquidity factor serves as a definite barrier to monetary policy. It is only under certain conditions (that is, an inelastic liquidity-preference schedule and no upward change in the liquidity schedule as a whole) that monetary policy operating through an increase in the money stock, and a consequent decline in the rate of interest, will cause a rise in the level of income.

Figures 42, 43, and 44 show the effect of changes in the money stock from M_1 to M_2 upon the rate of interest under various assumptions about the liquidity-preference schedule.

Interest and Investment A second possible barrier between changes in the stock of money on the one hand and changes in the level of income on the other can be traced to the nature of the investment schedule. Even if the monetary authorities succeed in lowering the rate of interest to a substantial degree, this fact alone does not ensure a rise in the level of investment. In order for a lower level of interest rates to induce a higher level of investment, two conditions need be present.

1. The investment schedule must be interest-elastic, and
2. The marginal efficiency of capital must not have fallen meanwhile.

If the investment schedule is not sensitive to changes in the rate of interest, a reduction in the rate of interest obviously will not bring about a rise in investment. Moreover, if the marginal efficiency of capital falls at the same time as the rate of interest declines, investment may not increase at all; in fact, investment may actually decline

if the fall in the marginal efficiency of capital is greater than the decline in the interest rate. Once again by resorting to diagrams (Figures 45, 46, and 47) we can depict the effects of change in interest rates from i_1 to i_2 .

Investment and Income The third possible way in which an increase in the money stock can change the level of income is through the consumption function. Even under the assumption that mone-

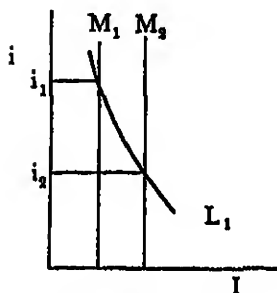


FIGURE 42 INELASTIC LIQUIDITY SCHEDULE. MARKED FALL IN INTEREST RATE (i) FROM i_1 TO i_2 WHEN THE STOCK OF MONEY INCREASES FROM M_1 TO M_2 .

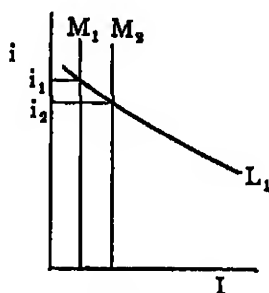


FIGURE 43 HIGHLY ELASTIC LIQUIDITY SCHEDULE. NEGLIGIBLE FALL IN INTEREST RATE (i) FROM i_1 TO i_2 WHEN THE STOCK OF MONEY INCREASES FROM M_1 TO M_2 .

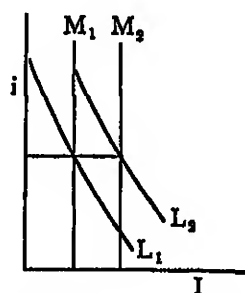


FIGURE 44 INELASTIC LIQUIDITY SCHEDULE. NO FALL IN INTEREST RATE BECAUSE LIQUIDITY SCHEDULE HAS SHIFTED UPWARD FROM L_1 TO L_2 AND NULLIFIED THE EFFECT OF AN INCREASE IN THE MONEY SUPPLY.

tary action succeeds in lowering the rate of interest and that the lower rate of interest induces an increase in the level of investment, the increase in the level of income will depend on the nature and behavior of consumption. If consumption expenditures decline at the same time as investment expenditures are increasing, income will not rise and may even fall. Further, the decline in consumption will itself bring about a fall in the marginal efficiency of capital and eventually investment itself will cease to rise. It is only if we assume that consumption does not decline that we can say that the rise in investment will lead to a rise in the level of income. Even under this assumption, the extent of the rise in income depends in a more important way on the consumption function. Any given change in the level of investment will produce small changes in the level of income when there is a very low marginal propensity to consume. A

high marginal propensity to consume provides a situation in which a given change in the level of investment will bring about substantial changes in the level of income. Another way of saying the same thing uses the concept of the multiplier. The higher the marginal propensity to consume, the greater will be the multiplier and the greater will be the rise in income consequent on a given change in the level of investment.

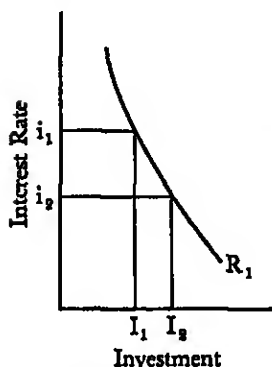


FIGURE 45 INELASTIC INVESTMENT SCHEDULE. NEGLIGIBLE RISE IN INVESTMENT (I) FROM I_1 TO I_2 WHEN INTEREST RATE FALLS FROM i_1 TO i_2 .

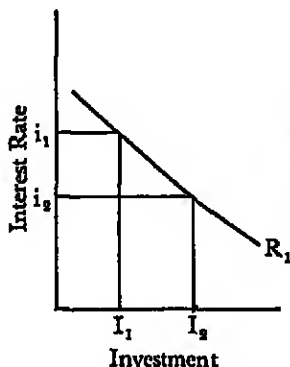


FIGURE 46 ELASTIC INVESTMENT SCHEDULE. SUBSTANTIAL INCREASE IN INVESTMENT (I) FROM I_1 TO I_2 WHEN INTEREST RATE FALLS FROM i_1 TO i_2 .

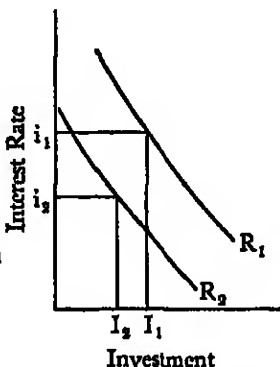


FIGURE 47 INELASTIC INVESTMENT SCHEDULE. NO RISE IN INVESTMENT (I). IN FACT, A FALL FROM i_1 TO i_2 BECAUSE A DOWNWARD SHIFT OF INVESTMENT SCHEDULE FROM R_1 TO R_2 HAS NULLIFIED EFFECTS OF THE LOWER INTEREST RATE.

The way in which the marginal propensity to consume and the behavior of consumption expenditure as a whole affect the relation between a given change in the level of investment and the induced change in the level of income, can also be schematically set out in diagram form. In Figure 48 the line OZ is drawn at 45° to the horizontal. As was pointed out earlier (see Chapter 19), at any point on the diagonal OZ consumption equals income.

Superimposed on this guide line OZ we can draw a curve showing the consumption schedule with various levels of consumption (measured on the vertical axis) corresponding to various levels of income (measured on the horizontal axis). In the diagrams on page 551,

Figure 48A depicts a consumption schedule which is highly income-elastic. Changes in the level of income lead to fairly substantial changes in the level of consumption. In other words, the marginal propensity to consume (measured by the slope of the consumption schedule) is high. Figure 48B depicts a low-marginal-propensity to consume. If in each case we assume a certain given level of investment I , we can add this level to the C/Y curves to show the total expenditure, or consumption plus investment at various levels of income and output.

Now, we can think of the OZ line as the supply schedule of national income, that is, of the total receipts which producers must receive at each level in order to justify maintenance of current output. The effective demand for the products of that national output—at various levels of income is shown by our $C/Y + I$ line—which shows the total expenditures on investment (which is assumed fixed at I) and consumption (which varies with the level of income). If effective demand is greater than total supply, national income will not be in equilibrium but will be subjected to continuous expansionary pressures. On the other hand, if effective demand is less than total supply, the economy will be subjected to continuous contractionary pressures. In terms of Figure 49—if the $(C/Y + I)$ line is above the OZ line national income will rise; if the $(C/Y + I)$ line is below the OZ line national income will fall. The level of income will achieve its equilibrium at the point where aggregate demand is equal to aggregate supply, i.e., where the $(C/Y + I)$ and the OZ lines intersect. In our diagrams this equilibrium point is for the level of income equal to OX .

We must now return to the relation between an increment of investment and the consequent increase in the level of income. Starting at the equilibrium point OX , let there occur an increase ΔI of the level of investment. The total effective demand now rises from $C/Y + I$ to $C/Y + I + \Delta I$. To what extent this will affect the level of income depends on two factors:

1. The slope of the C/Y curve
2. Changes in the C/Y curve

which take place at the same time as the change in investment. The situation is depicted in Figure 50.

If the C/Y curve is highly income-elastic, that is, if the marginal propensity to consume is high, a given change in investment will lead to fairly large changes in income.

If the C/Y curve is income-inelastic, i.e., if the marginal propensity to consume is low, the same change ΔI in investment will

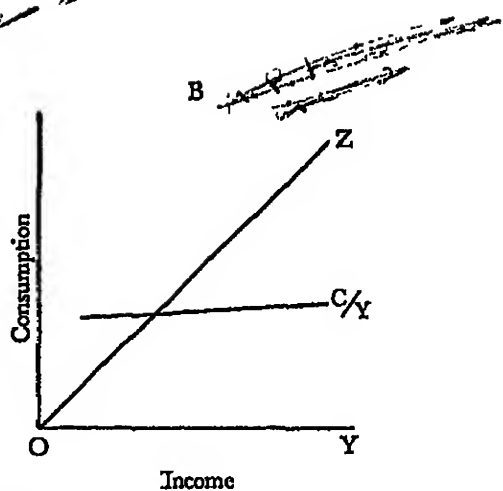
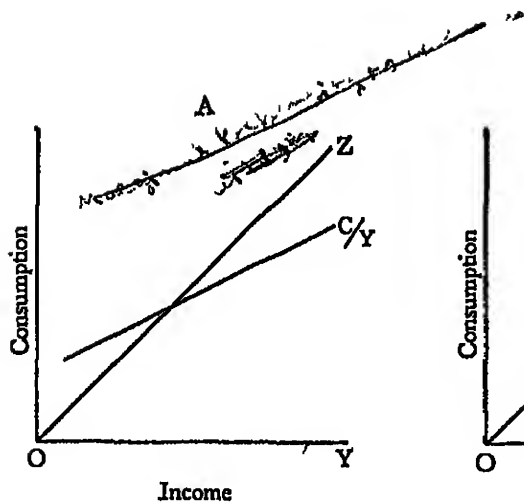


FIGURE 48

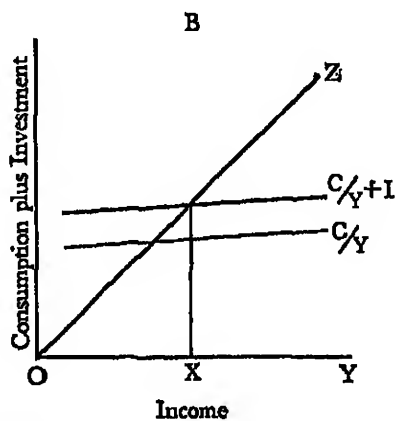
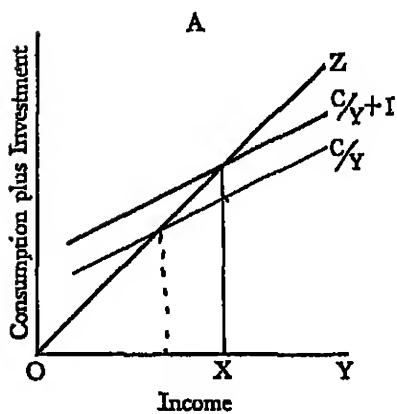


FIGURE 49

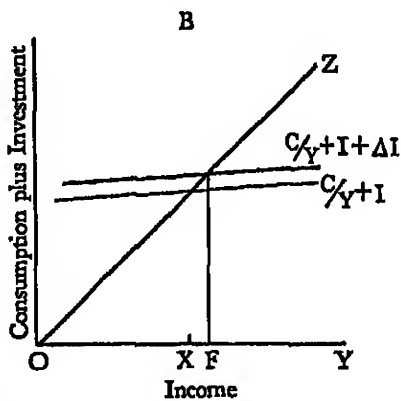
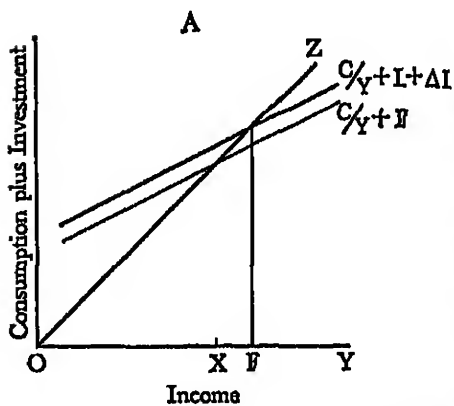


FIGURE 50

lead to much smaller changes in the level of income. This is evident when the size of XF is compared in Figures 50A and 50B.

Figure 51 shows what might happen (even if the marginal propensity to consume is high) if the rise in investment is accompanied by a fall in the entire schedule of consumption from C/Y to C/Y' . The decline in the consumption schedule leads to a decline in income from OF to OG .

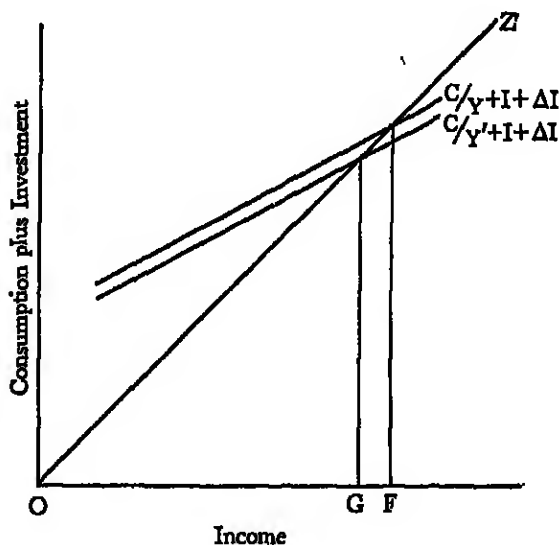


FIGURE 51

Summary: Money and Income To summarize the conclusion of the last few pages:

A change in the supply of money will bring about a fall in the interest rate only if

1. Liquidity meanwhile does not change upward.
2. The schedule of liquidity is interest-inelastic.

A fall in the interest rate will bring about a rise in the level of investment only if

1. The schedule of investment is interest-elastic.
2. The marginal efficiency of capital does not meanwhile change downward.

A rise in the level of investment will bring about a rise in the level of income

1. If the propensity to consume does not meanwhile change downward.
2. The higher the marginal propensity to consume, the greater will be the rise in income due to a given rise in investment.

QUESTIONS AND PROBLEMS

1. a. To what extent does Keynes in the *General Theory* make use of the contributions of the writers discussed in Chap. 18?
b. To what extent does the *General Theory* represent an improvement on these writers' views?
2. a. Compare the transactions approach to the quantity theory of money and the Keynesian system of income determination. In your answer note especially:
Objectives of these approaches.
Underlying assumptions.
Relationships established.
b. Critically evaluate the contributions of these approaches to our understanding of monetary economics.
3. a. What is the effect on the marginal efficiency of capital if new inventions are mainly of the labor-saving type?
b. If they are capital saving; that is, less capital is required to produce the product than the existing techniques use for replacement of their equipment.
4. a. Show how an increase in the quantity of money—for example, an expansion of deposits and loans—is absorbed in an underemployed economy.
b. Can you reconcile the Keynesian answer to this question with the traditional quantity theory of money approach?
5. Trace the connection, according to Keynes, between the quantity of money and the level of income. Illustrate by reference to the depression of the 1930's; the World War II economy; and the postwar economy in the United States.

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PART V

**INTERNATIONAL
FINANCE
RELATIONS**

International Finance

BEFORE we explain the complex issues involved in international monetary relations, the student should understand the manner in which international payments are executed and the various instruments which arise in the process. There are marked differences in the financing of international as contrasted to domestic trade. Risks in foreign dealings are greater for both buyer and seller since the distances involved are usually greater and both parties operate under different laws and commercial customs. As a result of involving more than one nation, legal redress or adjustment of wrongs is usually protracted, if not impossible to obtain.

For these reasons, terms of sale in international trade differ from those prevailing in domestic trade. Since unsecured credits afford limited assurance of collection to exporters, specific security is usually requested of an importer. Despite this precaution there are many more risks prevalent in international financing than in its domestic counterpart. The currency of the seller's country may appreciate or depreciate relative to the currency of the buyer's country, thereby raising the price of imports to the buyer or causing the seller to lose his profits. There is the further risk that the governments of either the buyer's or seller's country or both will interfere with the relations between buyers and sellers. Especially since 1929 governments have intervened through limiting imports under tariffs and quotas as well as by restricting dealings in foreign exchange.

■ FINANCING METHODS IN FOREIGN TRADE

The terms of sale and methods of financing foreign trade may be classified as shown in Table 54.

TABLE 54
FINANCING METHODS IN FOREIGN TRADE

I. Financing by importer
1. Payment with order
2. Payment against documents
II. Financing by exporter
1. Consignment
2. Open account
3. Trade bill (sent for collection), drawn in either dollar or foreign currency
III. Financing by exporter's bank
1. Discount of trade bill
2. Advance collection of trade bill
3. Refinancing acceptance
IV. Financing by importer's bank
1. Commercial letter of credit
2. Authority to purchase

FINANCING BY IMPORTER

The importer may be required to carry the burden of financing. Under such circumstances, he is required to remit the amount of the sales price of the merchandise in the exporter's currency (1) when the order is placed or (2) at the time of shipment of the goods. If the importer's credit rating is unknown or unsatisfactory, the exporter will not want to arrange the shipment of goods unless the order is accompanied by the full amount of the sales price of the merchandise in the exporter's currency. However, there may be a compromise arrangement whereby a substantial down payment in the exporter's currency accompanies the order, the remainder to be paid when the goods are ready at the port of shipment. Finally, the exporter may have sufficient confidence in the buyer to prepare the goods for shipment but insist that the importer remit the amount of the sales price of the merchandise by depositing this sum with a bank in the exporter's currency. The bank pays the exporter when he turns over to it the shipping documents which convey title to the goods.

Prepayment with an order or cash against documents was required prior to 1931 only of importers whose credit standing was unknown or unsatisfactory. Since that time, however, it is more widely employed, especially of importers in whose countries foreign exchange restrictions are imposed by the government.

International Cash Payments We shall digress from our discussion to explain briefly the different ways in which an importer may make cash payments in international trade. International cash payments can be made in seven ways by sending

1. Gold.
2. Coin and paper currency.
3. Bankers' sight and cable bills.
4. Checks drawn against a local bank.
5. Cash letter of credit.
6. Traveler's letter of credit.
7. Traveler's check.

Gold. In the past free import and export of gold by citizens of countries under the gold standard was possible. However, even when possible, people having international cash payment to make rarely employed gold to effect payment since it was too costly and other means were available from banks at less cost; gold shipments were made by financial institutions to replenish foreign balances. In the postwar II era governments exercise strict control over gold movements, and even financial institutions find gold shipment possible only under licenses issued by those governments under strict supervision. Thus, gold is rarely employed as a method of effecting international cash payment today.

Coin and paper currency. One country's currency and coin may be acceptable in other countries. However, foreign currencies will have limited powers of circulation in a country since they are not endowed with legal-tender power. In practice, therefore, only a very small fraction of international payment is effected through the use of paper currency and coin.

Bankers' sight and cable bills. The most common method of effecting an international cash payment is to go to a bank and purchase a sight bill of exchange. This is an order drawn by a bank on its correspondent in a foreign country ordering the latter to pay a specific sum of money on demand to bearer or to the order of a designated party. The American debtor pays dollars and obtains a draft in a foreign currency which he then sends by mail to his foreign creditor who collects in his local currency by presenting the bill to the bank upon whom it is drawn.

Payment is not effected until the creditor receives the sight bill. It may take eight days to arrive via the mails. If the American debtor desires to effect immediate payment, he may ask his bank to send a cable to its correspondent bank abroad ordering the latter to pay to a designated party the specific sum involved. This instrument is called a telegraphic transfer (T/T). The T/T makes possible an immediate transfer of the American bank's foreign funds whereas a sight bill entails a delay of approximately one week. To compensate for the loss of interest for a week as well as the expense of a cable, the American bank will charge more for a cable than for a sight bill.

Check against a local bank. International payment can be made by drawing a check against one's deposit with a local bank and sending this check to a creditor in a foreign country. An importer's check is as good as his credit standing; thus payment by this method is usually restricted to importers with good credit standing. An American receiving a check drawn by an English importer on an English bank would bring the check to his bank in the United States and obtain dollars at the current rate of dollars for pounds. The American bank in turn would send the check to its correspondent in England, who would collect from the bank on which it is drawn and would then credit the American bank account for that amount of money. In the ordinary course of events it would take about two weeks before payment was effected. This method of effecting payment on international debt was never widespread and has become even less important in view of the almost world-wide resort to foreign exchange restrictions by governments since the end of World War II.

Cash letter of credit. A cash letter of credit may be employed to effect an international cash payment. Actually this instrument arises under a commercial letter of credit to be discussed later. Assume an American importer has bought 50,000 yards of English cloth. The American obtains from his bank a cash letter of credit which empowers the British exporter to draw a sight draft on the American bank for, say \$10,000. After shipping the goods to the United States, the British exporter draws a sight draft on the American bank and sells it to his bank in England for pounds sterling at the current buying rate for dollar demand drafts. The British bank then sends the draft to its American correspondent, who collects from the issuing bank and credits the English bank's deposit account in a United States bank. The American importer protects himself by a provision in the letter of credit making the draft payable only if it is accompanied at the time of presentation by a bill of lading giving the American importer title to the cloth.

Traveler's letter of credit. Since personal checks are difficult to cash where a person is unknown, and carrying large sums of cash is especially hazardous when traveling, the traveler's letter of credit is extensively employed. This instrument, sold by banks, authorizes the person to whom it is issued to draw sight drafts on the issuing bank and to present them to the bank's foreign correspondents who will pay either in dollars or in the local currency up to the amount specified in the letter, providing these sight drafts are drawn within the period for which the letter is valid. The instruments may be drawn in any currency, but since World War I they usually authorize the drawing of dollar drafts.

In buying a traveler's letter of credit, the recipient may be required to pay cash for the face value of the letter or the purchaser may arrange to have his deposit account with the issuing bank debited as the drafts are presented to the issuing bank for payment. The owner of the letter of credit sells part of it, or the whole of it, as the need arises, at foreign correspondents who serve as paying agents of the bank issuing the letter. The correspondent bank then notes on the letter of credit its name, the amount of the draft it has purchased, and the date. Thus, other correspondents are informed that the face amount of the letter is no longer available for drawing by the beneficiary. The bank paying the draft which exhausts the letter of credit attaches it to the draft and returns it to the issuing bank.

Traveler's check. A traveler's check is a sight draft drawn on a bank by its cashier and purchased by an individual from the bank. The buyer of the check writes in his name as payee at the time of purchase. He is required to countersign these checks in the presence of the banker or merchant who cashes them. Ordinarily, the purchaser of a traveler's check is required to pay the issuing bank cash in advance; in addition, the bank charges a commission for the service which it renders.

These checks are usually sold in round denominations of \$10 to \$100. The holder of such checks rarely has any difficulty in cashing them. In the United States they are usually accepted at par; in foreign countries they are purchased (as are drafts drawn under a traveler's letter of credit) at the current buying rate for dollar instruments payable on demand. A foreign bank which buys traveler's checks sends them to its American correspondent, which collects them from the issuer and in turn credits the foreign bank's account.

FINANCING BY EXPORTER

We now return to the main theme of this chapter—the different methods of financing international trade. The exporter may assume the burden of financing. When he consigns goods for sale to his representatives, he not only finances the transaction, but since he is paid in the foreign currency, he also assumes the burden of exchanging that currency into his local currency. If an open-book account is used the exporter must rely entirely on the integrity of the importer so that such accounts are employed only for customers with whom the exporter has maintained successful business relationships for a number of years. In an open-account transaction the buyer usually remits payment by a bank draft according to his agreement with the seller. Normally banks do not assist exporters to finance shipments on consignment or open-book accounts; therefore, when the exporter desires to extend credit to his customer, he usually resorts to a bill of exchange, since funds may readily be secured by reliable exporters who have documentary drafts to discount at the bank. Thus, the use of a bill of exchange is far more satisfactory to the exporter since it enables him to initiate steps to procure payment.

TRADE BILLS

The terms of sale arranged by importers and exporters in international trade may entail the use of trade bills. As pointed out in Chapter 4, a *trade bill* is an unconditional order in writing signed by the drawer which requires the party to whom it is addressed to pay on demand or at a fixed or determinable time in the future a definite sum of money to the order of a specified person or to the bearer. Thus, three parties are involved: the *drawer*, usually the exporter; the *drawee*, usually the importer; and the *payee*, who can be the exporter or a bank which purchased the draft from the exporter or has agreed to collect the money for the exporter.

Forms of Trade Bills Trade bills may be classified by maturity and by security. *Sight* bills are those which are payable upon presentation, or at sight or on demand. *Time* bills are payable at a fixed or determinable future time. Classified by security we may distinguish between *clean* and *documentary* trade bills. These categories are represented as follows:

- I. Sight (demand) bills.
 1. Clean.
 2. Documents against payment.

II. Time bills.

1. Clean.

2. Documentary.

A. Documents against acceptance (D/A).

B. Documents against payment (D/P).

A clean trade bill is an order to pay which is not accompanied by a bill of lading or other documents evidencing title to the goods. Payment may be required on sight or at some future time. In either case the importer receives the bill of lading and other documents directly from the exporter and is able to obtain possession of the goods without reference to the trade bill. A sale of goods against a clean bill is really equivalent to a sale on open-book account and is employed only when an exporter has complete confidence in the importer's willingness and ability to pay the amounts involved.

Operation of Trade Bills Ordinarily the exporter gives the trade bill to his bank for collection, and the latter sends it to a foreign correspondent (or branch) for collection. If it is a sight bill, the importer is required to pay upon presentation. When it is a time bill, the importer is asked to accept it, whereupon the correspondent bank holds it until maturity, at which time it is presented for payment.

Trade bills drawn by exporters are usually documentary, which means that they have attached to them a set of shipping documents which assist the exporter to maintain control over the goods, thereby enhancing his security. The bill of lading (described in Chapter 4) is generally made out to the order of the shipper and endorsed in blank. The commercial invoice specifies type and quantity of merchandise and stipulates prices, terms, and other features of the transaction. Marine insurance is evidenced either by a policy written on the specific shipment, by a certificate written under an open policy issued to the exporter, or by a written statement of the shipper that insurance is effected abroad. Minor documents, varying with the nature of the goods and the country to which they are sent, include the consular invoice, the certificate of origin, the antidumping certificate, and the inspection and health certificates (to give assurance of the sanitary condition of certain goods).

The documents which convey title to the goods may be turned over to the importer only after he has paid the sum required by the trade bill. All sight documentary bills are by their nature D/P bills; time bills with documents attached may be D/P bills. The virtue of a D/P bill to the exporter is that he receives payment before surrendering control over the merchandise. When a D/P time bill is

employed, merchandise arrives in the importer's country but the importer cannot take possession until he has made payment. Should the maturity be more than a few days, it is clear that the merchandise which is stored must be durable.

The documents attached to time bills may instead be surrendered to the importer after he signifies his liability by accepting the bill drawn on him (D/A). The exporter surrenders control over the merchandise when the importer accepts under a D/A bill. The importer may sell these goods and refuse to pay the bill upon its maturity and the exporter would have to resort to legal action to obtain payment. To avoid this contingency, goods are sold on D/A terms only to importers with well-established and high credit standing.

Regardless of whether the bill is D/A or D/P, the exporter surrenders the bill and the attached shipping documents to his bank for collection. The latter in turn forwards them with the exporter's instructions to its correspondent bank in the importer's country. In accord with the instructions, the correspondent releases the documents to the importer upon payment or acceptance of the trade bill. The importer is ordinarily given the opportunity to inspect the merchandise before acceptance or payment. After obtaining payment the bank remits the funds to the exporter's bank, which then credits the exporter's account. When the documents are released only against payment, whether the bill is a sight or time instrument, the importer has not received credit for the period consumed in the display and disposal of the goods.

FINANCING BY EXPORTER'S BANK

When the documents are released upon acceptance, the exporter has the task of arranging the financing of the transaction. He may retain the D/A bill and merely pass it for presentation and collection through his bank. In this case the exporter is financing the sale himself. The advantage of a trade bill is that the exporter can use it as a basis for financing the transaction out of which it arises by selling the bill to his bank. Normally a bank will not purchase a clean bill or a D/A bill, since the importer acquires control over the goods before paying for them, thus affording the bank little protection. However, the bank will purchase a D/P bill. The importer is primarily liable, but the exporter assumes a secondary liability when he discounts the bill; therefore, only exporters with a high credit standing can discount trade bills. Should the proceeds of the sale of goods be insufficient to enable the importer to meet

his obligation, the bank can seek restitution from (that is, have recourse on) the exporter for whom it discounted the bill. When the bank grants advances against bills, it obtains from the exporter either an hypothecation certificate covering the specific shipment or a "general" letter of hypothecation, applying to all the exporter's bills. This document includes in its statements an authorization to the banker to sell to best advantage the goods covered by the bill if payment should be refused. To summarize: *When a bill is discounted, the exporter avoids the task of financing the transaction by using the facilities of the bank.*

Advance Collection and Refinancing Acceptance Instead of discounting the bill the bank may provide an *advance collection* in which the bank and exporter jointly finance the international sale. The bank takes the bill and attached documents for collection and grants the exporter a loan up to a certain percentage of the face amount determined by the character and marketability of the merchandise. Alternately, the bank may arrange a *refinancing acceptance*. At the time the exporter gives the bills and documents to the bank, he draws a clean bill on the bank which the bank accepts. The refinancing acceptance is drawn on a bank and has a much higher credit standing than a trade bill and can therefore be sold in the open market at a lower discount rate than the trade bill. At maturity the refinancing acceptance is retired by the bank out of the proceeds from the collection of the trade bill. It is noteworthy that neither the exporter nor his bank finance the sale when a refinancing acceptance is used. The ultimate financier of the transaction is the purchaser of the banker's bill, although the exporter's bank has facilitated the financing by employing its superior credit status.

COMMERCIAL LETTER OF CREDIT

A common method of making payments in foreign transactions and one in which the importer assumed the burden of initiating financing arrangements is the commercial letter of credit. A commercial letter of credit is an instrument or letter issued by a bank (*issuer*) at the request of one party (*opener*) authorizing a second party (*beneficiary*) to draw bills on it for a specified sum of money payable at a designated time.

Financing by Importer's Bank If these drafts are drawn in accordance with the specifications contained in the letter, the bank agrees to honor such drafts by accepting (in the case of a time bill) or paying (in the case of a sight bill) them. The merit of this method of financing is that the exporter upon receiving this agreement by the

importer's bank can rely on the superior credit standing of the bank and after drawing a bill on the bank under the terms of the agreement should find no difficulty in selling it.

FORM 1

THE NATIONAL CITY BANK OF NEW YORK
80 WALL STREET

IRREVOCABLE CREDIT

NEW YORK 18, N Y

ALL DRAFTS DRAWN MUST BE MARKED:
DRAWN UNDER CREDIT NO.

DEAR SIR:

WE HEREBY AUTHORIZE YOU TO VALUE ON

FOR ACCOUNT OF
UP TO THE AGGREGATE AMOUNT OF
AVAILABLE BY YOUR DRAFTS AT

FOR

INVOICE COST TO BE ACCOMPANIED BY

(1) CONSULAR INVOICE (2)

BILLS OF LADING

DRAWN TO THE ORDER OF

(3) COMMERCIAL INVOICE STATING THAT IT COVERS

ORIGINAL

BILLS OF LADING MUST BE DATED NOT LATER THAN
BILLS OF EXCHANGE MUST BE NEGOTIATED NOT LATER THAN

WE HEREBY AGREE WITH THE DRAWERS, ENDORSERS AND BONA FIDE HOLDERS OF DRAFTS DRAWN UNDER
AND IN COMPLIANCE WITH THE TERMS OF THIS CREDIT THAT THE SAME SHALL BE DULY HONORED ON DUE
PRESENTATION TO THE DRAWEE.

YOURS VERY TRULY,

THE NATIONAL CITY BANK OF NEW YORK

GAL, 9th REV (4)

FIGURE 52 COMMERCIAL LETTER OF CREDIT

There are several distinct features of the letter of credit that should be stressed. The issuer of the letter of credit does not lend any money—it merely lends its good name. The acceptor assumes a liability to pay the bill upon maturity even if the importer defaults on his obligation. The importer receives the goods on credit and can then process them for sale, at which time the proceeds are used

to pay for the goods. Since the exporter obtains a prime credit instrument which is readily salable, the price of the goods charged the importer may be lower. The exporter by selling the bill obtains his funds at the outset. Should a bank in the exporter's country hold the bill until maturity, it is financing the sale of goods.

Operation of Letters of Credit The mechanics of an import letter of credit can be best explained by an illustration. In the discussion which follows, we shall confine our attention to commercial letters which authorize second parties to draw drafts payable in the future (time bills).

After an American importer has arranged with a British exporter for specified goods, prices, and terms of payment, he (*opener*) asks his bank (*issuer*) to open a letter of credit in favor of the exporter (*beneficiary*). When the application is approved by the bank, the importer fills out a formal letter of credit agreement which sets forth the rights of both the bank and the importer under the letter. The American bank has pledged its credit; it must consider the risk and the security. The security is the merchandise involved; the risk is the reliability of the importer to provide the bank with the funds when due. If the credit standing of the importer is not sufficiently high to assure acceptance by the bank of his unsecured promise to provide the bank sufficient funds to pay the bill at maturity, the bank may insist that the importer make a down payment, pledge securities, or obtain a guarantee from a third person.

The importer's bank then usually sends the letter of credit directly to the exporter in London. After receiving the letter of credit the exporter prepares the merchandise for shipment, obtains the required documents, and draws a bill on the American bank. The exporter then takes this bill with accompanying documents and presents it to its own or another bank (or an acceptance dealer or discount house). If the bank is satisfied that the documents are in accordance with the specifications of the letter of credit, it will buy (negotiate) the bill and provide the exporter with the funds he desires.¹

The negotiating bank (in London) will then send the bill and documents to its American correspondent, which presents the bill to the drawee bank which must honor (accept)² it unless the documents fail to comply with the stipulations of the letter of credit.

¹ It is possible for the exporter to request his bank to send the bill to the American bank for acceptance and collection upon maturity. In this instance the exporter is carrying the burden of financing the sale; in practice this procedure is rarely employed since the exporter desires to obtain funds as quickly as possible.

² Since this discussion is restricted to time bills, the requirement that the drawee bank pay the bill at sight is not considered.

In accepting the bill, the American bank detaches the documents. The importer can obtain the goods from the shipping company by signing a trust receipt (outside of Great Britain and the United States, a warrant) which retains the bank's title to the goods and obligates the importer to use the proceeds of the sale of the goods to meet his obligations to the bank.

The American correspondent of the English bank may hold the bill until maturity or sell it in the open market through an acceptance dealer. The bill may pass through several hands and may eventually reach the central bank. The burden of foreign trade financing, therefore, is borne by those institutions which have surplus funds. Before maturity of the acceptance the importer places with the issuer the funds required to meet it, and at maturity the acceptance is presented by the holder to the acceptor for payment. A graphic summary of the above transaction is given in Figure 53.

Forms of Letter of Credit A commercial letter of credit may be *revocable* or *irrevocable*. If it is *revocable*, the issuer reserves the right to cancel the credit before its expiration date by notifying the parties concerned. Thus, the bank need not honor the draft when it is presented. In view of the uncertainty of acceptance a revocable letter is not a prime instrument and may not be acceptable to the exporter or to banks in his country who would refuse to buy drafts drawn under such a letter. An *irrevocable* letter cannot be canceled by the issuer without the beneficiary's consent.

The letter may be *confirmed* or *unconfirmed*. When the beneficiary has some doubts as to the credit standing of the bank issuing the letter of credit, he may ask the importer to have a bank in the exporter's country confirm the credit. The confirming bank promises that it will accept or pay even if the issuing bank fails to honor the bill. Where the correspondent bank merely notifies the exporter but does not add its guaranty, the letter is unconfirmed. It should be apparent that an irrevocable confirmed credit is strongest and a revocable unconfirmed letter is weakest. There are no instances of revocable confirmed letters, as no bank will guarantee a letter which the issuing bank may cancel.

A *revolving* letter of credit automatically renews the stipulated amount available to the beneficiary during the period specified. It is frequently used by dealers in international staples traded in organized exchanges and subject to daily price fluctuations so that dealers may keep funds available for advantageous purchases. Under one type of revolving credit the full amount of the credit or such parts of it which have been repaid to the bank by the importer become available to the beneficiary, while under another type the full

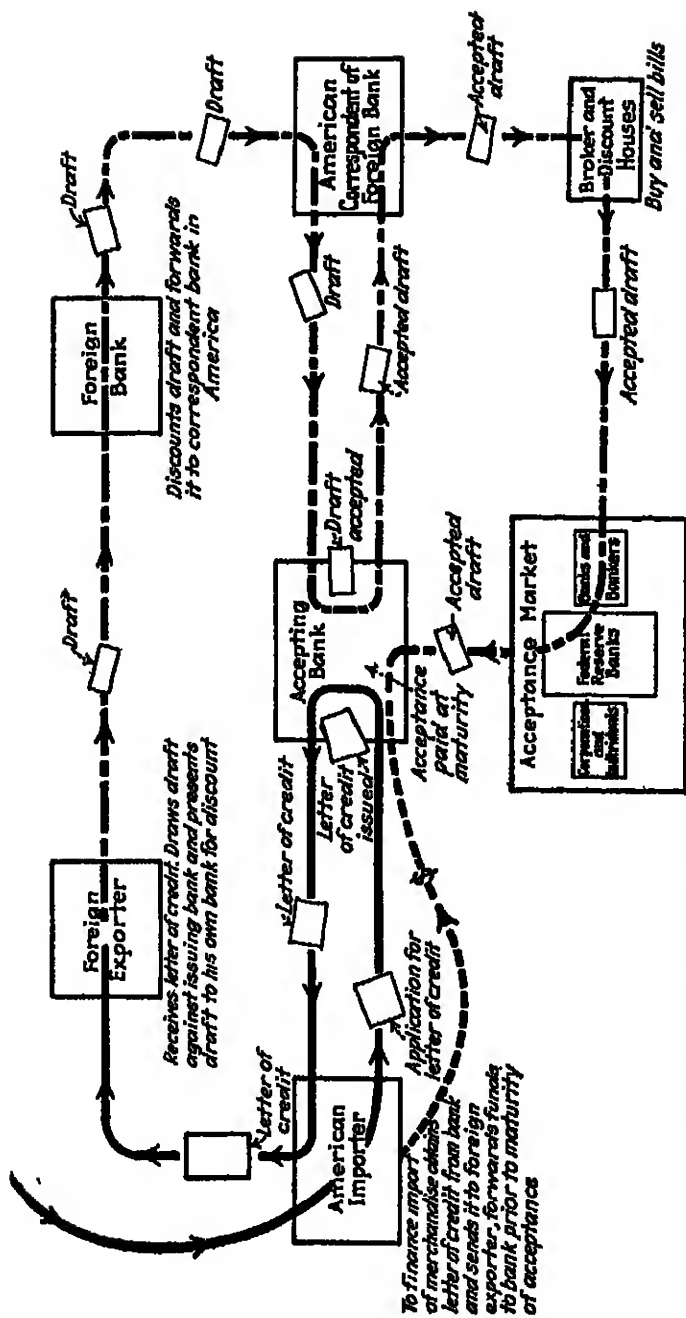


FIGURE 53 FINANCING AN IMPORT TRANSACTION BY BANKERS' ACCEPTANCES

amount is drawn in one bill and becomes available to the exporter upon payment by the importer. An illustration may clarify the distinction. Assume an importer has secured a letter of credit for \$50,000. In the first case, a draft of \$25,000 has been drawn on the bank by the exporter, and this sum is given to the bank by the importer. Then the exporter is advised that the \$50,000 letter of credit is still available to him. In the second case, a draft of \$50,000 is drawn on the banker, and only after the importer pays this is the exporter advised that \$50,000 is still available to him. A *nonrevolving* (fixed) credit expires when the amount specified has been drawn.

Authority to Purchase Another instrument of foreign trade financing which is especially used in dealings with Far Eastern merchants is the *authority to purchase*. This instrument resembles a commercial letter of credit except that it gives rise to trade bills drawn by the exporter on the importer rather than bankers' acceptances drawn by the exporter on a bank and accepted by the bank. An authority to purchase may be defined as a letter issued by a Far Eastern bank to its branch or correspondent abroad instructing it to buy the bills drawn by an exporter on a Far Eastern importer. Its operation may be outlined as follows: An Indian merchant contracts to purchase merchandise from an American firm at a definite price and authorizes the American exporter to draw bills on him. The Indian merchant then goes to his bank and gives it a letter of guarantee in which he commits himself to the bank to accept bills and to honor them at maturity. The Indian bank then mails or wires its foreign branch or correspondent in the United States instructing it to purchase the exporter's bill under the conditions stipulated by the importer in his application. It is the advice to the foreign institution given by the Indian bank which is the "authority to purchase."

The American branch or correspondent acting as agent of the Far Eastern (Indian) bank then notifies the American exporter that it will buy the exporter's bills drawn on the Indian importer under the terms of the authority. The exporter prepares the shipment, draws the draft on the importer, and sells it to the bank. The American correspondent then forwards the draft to the Indian bank which collects from the Indian importer upon maturity. The exporter thus obtained his funds immediately whereas if no authority to purchase were issued, he would have to wait for payment until the draft was sent to the Orient.

The American exporter is not afforded any real protection since the American correspondent buys the bill merely as an agent of the Indian bank. Moreover, the Indian bank does not guarantee pay-

ment by the Indian merchant. Should the importer fail to honor the draft, the exporter who is secondarily liable as drawer will be called upon to reimburse the American correspondent bank for the funds advanced by it when the draft was purchased. The American exporter is given some protection in that the Indian bank would not have issued the authority to purchase without a careful scrutiny of the credit standing of the Indian importer.

As was pointed out above, the authority to purchase differs from the commercial letter of credit in that it gives rise to trade bills drawn by the exporter on the importer, and not to bills drawn by the exporter on a bank. Trade bills usually sell at a higher discount than banker's bills, and for this reason financing through an authority to purchase is more expensive to the exporter. Moreover, under the authority to purchase the exporter remains liable until the importer has honored the bill, unless (as rarely happens) the exporter is permitted to draw as well as endorse the bill without recourse. Under the commercial letter of credit, however, once the drawee bank has accepted the bill drawn by the exporter, the latter is liable only in case that bank fails. Authorities to purchase are generally revocable (upon notice by the agent to the exporter that the authority he has received from his bank abroad to buy the bills has been canceled). An irrevocable authority to purchase merely requires the agent of the foreign bank to buy the bill and does not release the exporter from liability in case the importer fails to honor the bill. All in all, the authority to purchase is decidedly weak from the point of view of the exporter, who lacks the protection afforded him by a commercial letter of credit.

FOREIGN BANKING FACILITIES

Banks may participate in the financing of foreign trade in several ways. Those in the larger centers either have direct relations with foreign banks or, in a few cases, establish their own foreign branches or participate in the ownership of special foreign trade banks. These facilities they make available to their correspondents in other parts of the United States.

Prior to 1913 operation of foreign branches was confined to a handful of private banking houses, but in that year the Federal Reserve Act authorized national banks with a capital and surplus of \$1 million to establish branches abroad with the approval of the Federal Reserve Board. In 1916 national banks with such a capital and surplus were further permitted to invest 10 percent of their capital and surplus in the stock of state-chartered corporations en-

who possess funds in a foreign center. Between these two groups are the bankers who act as intermediaries; they purchase funds from sellers, keep them available, and sell them to buyers.

The foreign department of a bank is able to draw drafts against the deposits it maintains with correspondents or branches in foreign centers. People who have payments to make in foreign countries may purchase drafts giving domestic money in payment. It is through the balance which the bankers maintain in foreign centers that a wide variety of international transactions are cleared. The foreign department of the bank can continue to sell drafts until its foreign deposits are exhausted.

There are four principal methods by which the United States bank can add to its foreign deposits. The major method is the purchase in America of drafts and other instruments payable in foreign currencies. These instruments are received or are drawn by American exporters in payment for commodities, securities, etc., supplied to foreign purchasers. They are sold to banks in this country because the American exporters need dollars rather than foreign funds to meet their obligations in this country. Should one bank run short of deposits abroad it may be able to secure additional funds from another bank in the United States which may have more foreign deposits than it requires for its current transactions.

The American bank may augment its deposits abroad by acquiring gold from the Treasury (through a Reserve bank) and shipping it abroad where it is sold for foreign currency which is then deposited in its account in a foreign bank.

The American bank may increase its deposits in one foreign country by withdrawing deposits held in a second foreign country and shipping the proceeds to the first country. Thus, a New York bank with deposits in France and in England may find it needs more sterling and does not need as many francs as it now possesses. It can draw a draft on its Paris correspondent, sell this to its London correspondent, and have the proceeds deposited to its account in London. Or it can instruct its Paris correspondent to buy a draft payable in London and send this draft to its London correspondent.

Finally, the American bank may borrow funds in a foreign country and have them credited to its account with its correspondent bank in that country. The loan may be negotiated directly with its foreign correspondent, or it may be obtained through the foreign money market. If, for example, an American bank wants to borrow in the British money market, it may ask its correspondent to draw a time draft against it, to sell this banker's acceptance in the money market, and to credit the proceeds to its deposit account. The buyer

of the bill in the British money market would send it to the United States for acceptance by the American bank; the latter would have augmented temporarily its funds in England and would have to pay off the bill at maturity.

The foreign departments of large commercial banks (often in seaboard centers) make foreign exchange facilities available to correspondents inland. In addition, there are foreign exchange brokers who arrange transactions between banks and between merchants and banks. The importance of the brokers has declined greatly in recent years as a result of the increasingly close contact between banks. Finally, as we noted in Chapter 10, acceptance dealers or discount houses participate in the market, chiefly when bills reach the center on which they are drawn. The Stabilization Fund created under the Gold Reserve Act of 1934 also operates in the foreign exchange market, buying and selling as its judgment dictates, while the Federal Reserve banks have extensive open-market powers to engage in foreign exchange dealings and (under the supervision of the Board of Governors of the Federal Reserve System) are empowered to establish correspondent relations with foreign banks.

CLASSES OF EXCHANGE RATES

The structure of exchange rates is rather complicated. Not only are there separate quotations for all the principal currencies in use throughout the world but there are often a number of rates for different types of bills payable in the same currency. At a time when foreign exchange markets are relatively free quotations are usually available on the following types of bills of exchange:

- I. Bankers' bills.
 - 1. Check (sight or demand).
 - 2. Cables.
- II. Commercial bills.
 - 1. Sight.
 - 2. 60-day.
 - 3. 90-day.

The quotations for bankers' bills refer to the prices at which the bank will sell funds it possesses in a foreign center. The quotation for commercial bills refer to the prices at which a bank in this country will purchase additional funds in a foreign center. Because of differences in the credit standing appearing on the bills and the length of time to maturity, there are perceptible differences in the

price of the respective bills which are discussed in terms of exchange on London.

1. "Checks" represent the price per pound of sight (demand) bills drawn by the American banker on his London account. They are negotiable, clean bills purchased by American debtors who send them by mail to their English creditors; the latter will present them for deposit or payment at the bank upon whom the bills are drawn.

2. "Cables" represent the price per pound of nonnegotiable orders sent by cable by a banker to his London correspondent to pay a specified sum to a designated party. The transfer is effected almost immediately since the mail time required to send the check from New York to London is eliminated. The cable rate is usually sufficiently above the sight rate to cover the loss of interest.

3. Commercial bills, usually documentary, are drawn by Americans against English debtors and are payable by the debtors upon presentation in England. When an American banker buys such a sight draft, he immediately sends it to his correspondent, who presents it for payment and credits the American banker's account with the proceeds. At the time the American banker buys a commercial sight bill, he can sell a "check" for a similar amount to an American debtor who has a payment to make in England. Thus, the two drafts would arrive in England at the same time, and the funds obtained from the collection of the commercial sight bill would provide cover for the sight draft which the American bank had sold to the American debtor. Since there is no loss of interest involved to the banker, a commercial sight bill sells for slightly less than a banker's sight bill due to the greater credit risk involved in the former.

4. Commercial time bills sell for less than commercial sight bills because the banker discounting the bill does not obtain the use of the foreign balance until the bill matures.

The spread between these rates is illustrated by the closing quotations for sterling on July 15, 1952. Bankers' cables sold for \$2.795 per pound sterling. This was the highest price. 90-day commercial bills were the lowest priced; they sold for \$2.78 per pound.

THE SUPPLY OF AND DEMAND FOR FOREIGN EXCHANGE

The rate of exchange is a price. At any given moment it may be regarded as the price of a claim to a foreign currency in terms of the domestic one. The demand for and supply of foreign exchange stand in reciprocal relationship to each other. A demand for dollars to finance an export to Great Britain may be viewed as

a supply of pounds. It is often confusing to know whether a particular international transaction represents an addition to the supply of or demand for foreign exchange. In any event, however, whenever an international transaction gives rise to international payments, it affects the rate of exchange. In an earlier section we reviewed the transactions affecting the supply of and demand for foreign currency as it was viewed by an individual bank. We must now examine the supply of and demand for foreign currency from the viewpoint of the United States as a whole. Thus, we must examine the types of international transactions that increase or decrease the total amount of foreign currency in the United States.

One peculiarity of foreign exchange should be clarified. Payments made by Americans to foreigners may not reduce the foreign balances of American banks, and payments made by foreigners to Americans may not increase them. The net effect of these transactions depends upon the currency in which payments are made. An American buying goods in Great Britain may pay in sterling or in dollars, depending upon the terms of the contract. If payment is made in sterling, the normal effect is to reduce the balances held in Britain by United States banks. If payment is made in dollars, the effect is to increase the balances held by British banks in America.

Thus, the demand for foreign exchange in the United States is determined by the total imports of goods, services, securities, and gold by Americans, while the supply of foreign exchange in the United States depends on the total exports of goods, services, securities, and gold by Americans. Payments of any kind due Americans by persons abroad either tend to increase the supply of foreign exchange on those countries and increase the total of American bank balances abroad or tend to decrease the foreigners' supply of dollars in the United States and reduce the total of foreign banks' balances in this country. In either event, the dollar tends to rise to a premium in terms of the foreign currency. Conversely, payments due foreigners tend to increase the demand for foreign exchange by Americans and serve to reduce American bank balances abroad or tend to increase the foreigners' supply of dollars in the United States and increase foreign banks' balances in this country. The dollar tends to fall to a discount in terms of the foreign currency.

It must be emphasized that not all international transactions give rise to international payments. Some transactions do not directly affect the supply of and demand for foreign currency. For example, a British resident may decide to come to the United States as a tourist and spend the dollars he receives as interest and dividends. A foreign loan may be floated in the United States with a "tying clause"

TABLE 55

PRINCIPAL FACTORS INFLUENCING THE SUPPLY OF AND DEMAND FOR
FOREIGN EXCHANGE

Transactions which increase American bank balances abroad or decrease foreign bank balances in the United States (originating in national credits)	Transactions which decrease American bank balances abroad or increase foreign bank balances in the United States (originating in national debits)
1. Shipments of Merchandise Exports of commodities including gold and silver	1. Shipments of Merchandise Imports of commodities including gold and silver
2. Service Transactions Commercial Shipping, insurance, banking, and other services rendered to foreigners by Americans Noncommercial Expenditures of foreign tourists in the United States Remittances by foreigners to individuals or institutions in the United States	2. Service Transactions Commercial Shipping, insurance, banking, and other services rendered to Americans by foreigners Noncommercial Expenditures of United States tourists abroad Remittances by Americans to individuals or institutions abroad
3. Capital Transactions Sale abroad of United States securities (stocks and bonds) Short-term loans by foreigners to Americans (purchase of short-term paper in United States) Foreign investment in American properties (land, buildings, etc.) Repurchase by foreigners of foreign securities held in United States Foreigners increasing their bank accounts in the United States Payment of interest, principal, or dividends on foreign securities in the United States	3. Capital Transactions American purchases of foreign securities Short-term loans by Americans to foreigners American investment in foreign properties Repurchase by Americans of American securities held abroad Americans increasing their bank accounts abroad Payment of interest, principal, or dividends on United States securities held abroad

which specifies that the proceeds of the loan must be spent in America. The completion of this transaction would not alter the supply, let us say, of Brazilian currency held by United States banks nor would it increase the supply of dollars held by Brazilian banks. Many other illustrations of similar transactions could be cited.

FOREIGN EXCHANGE OPERATIONS

A variety of legislative and administrative policies and devices have been adopted to promote stability of exchange rates. These will be discussed in the following chapter. Under reasonably free and orderly conditions, however, there are forces within the foreign exchange market which contribute to stability of exchange rates and automatically tend to correct irregularities and imperfections in the market. For the most part exchange rates tend to be kept in relationship to one another and to other rates in the money market by means of the operations undertaken by foreign exchange specialists who are seeking to maximize their profits.

Investment in Exchange When money rates are higher abroad than at home, the banker invests in foreign exchange. Ordinarily a banker holding, say, a 90-day sterling bill, would send it abroad and discount it before maturity, selling sterling sight drafts against the proceeds realized from the bill. If the rate of interest is higher in England than it is in New York, however, the American banker will invest in exchange by holding the bill to maturity rather than by discounting it, and he will thus earn interest to the maturity date. In so doing, however, he is speculating as to the future of exchange quotations; if the sight rate in New York on England is \$2.80 at the time and becomes \$2.78 in 90 days, then the banker earns the interest but at the same time loses money by reason of the decrease in the sterling exchange rate. If, however, the banker at once sells a future calling for delivery in 90 days, he avoids the problem of fluctuations in the exchange rate.

Arbitrage There are dozens of national currency units in the world. Each of them has a dollar price. These dollar prices should be compatible with one another. If they are not, specialists in foreign exchange may seek to benefit from the existing discrepancy in rates by the simultaneous purchase and sale of exchange in different centers.

The simplest case of arbitrage would be two-point arbitrage which we shall assume occurs between New York and London through the mutual cooperation of bankers in these centers. The arbitrage transaction ordinarily takes place in the cable rates since the arbitrage

seeks immediate profits and does not wish to tie up his funds for even a short period. Suppose a New York banker who knows that the sterling cable rate is \$2.795 is informed that in London dollar cables are quoted at \$2.79. Having obtained the cooperation of a bank in London, he then sells sterling cables in New York for \$2.795, while the London bank sells dollar cables in London for \$2.79 to acquire the sterling needed to cover this sale. The resulting gross profit of one half cent per pound (\$500 per 100,000 pounds) would then be divided by the banks involved. The sale of sterling in New York would tend to depress sterling in New York and the sale of dollars in London would tend to depress dollars in London, hence uniform rates would again tend to prevail and no possibilities for arbitrage would exist.

A more complicated arrangement would be three-point arbitrage in which three centers are involved. Consider the following simplified example:

Cables in New York on London	\$2.80
Cables in New York on Toronto	1.00
Telegraphic transfers in Toronto on London (per pound)	2.76

In New York a pound costs \$2.80 in United States dollars and a Canadian dollar costs \$1.00 in United States dollars. In Toronto a pound costs \$2.76 in Canadian dollars. An alert trader can make a profit by sending funds in a circle. The New York banker sells pounds in New York for \$2.80 and acquires Canadian dollars at one United States dollar per Canadian dollar. With the Canadian dollars he buys pounds in Toronto at \$2.76 per pound in Canadian dollars. To buy a pound in Canada costs \$2.76 of Canadian funds which would cost \$2.80 in United States funds. The banker makes a profit of \$.04 per pound less various expenses. This spread would not continue for long since sales of pounds in New York would bring about a fall in the dollar price of pounds. Moreover, the Canadian dollar would rise in price in New York. In Toronto the Canadian dollar would fall in price relative to the pound. Thus the gap in prices of the various currencies would be narrowed and ultimately would close thereby putting an end to these arbitrage opportunities.

Forward Exchange In addition to spot exchange which refers to the purchase or sale of a claim to foreign currency for immediate delivery, there are available in some financial centers "forward" exchange in some foreign currencies. "Forward" exchange refers to a contract in which a trader in foreign exchange agrees to buy or sell at a rate designated when the transaction is entered into, claims

to a foreign currency which will be delivered at some future time.

Forward contracts are sought by importers and exporters who make contracts in foreign currencies and wish to avoid the risk of fluctuations in exchange rates. Suppose an importer in the United States is considering the purchase of merchandise in England at a cost of £5,000. Assume the spot rate of exchange in New York on London is \$2.80; the American importer would have to pay \$14,000 for the goods today. If the merchandise is to be paid for 60 days hence, the importer runs the risk that he may have to pay more or less depending upon the spot exchange for pounds in New York 60 days in the future. Since the importer does not care to speculate in exchange, he can try to negotiate a futures contract with a bank in which the bank agrees to sell him £5,000 in 60 days at a fixed sum of money, say \$2.80 per pound. With this forward contract the merchant need not fear exchange rate fluctuations.

A United States exporter also may desire to avoid speculating in the future of exchange-rate movements. An American exporter expecting to receive £5,000 from a British firm in 60 days desires immediate assurance respecting the number of dollars into which the pounds will be convertible. If the spot rate is £1 = \$2.80, he may get \$14,000 in 60 days or he may get more or less depending upon the spot rate in 60 days. In order to avoid the risks of rate fluctuation, the United States exporter would ask his banker to enter into a contract with him to buy the £5,000 in 60 days at a rate agreed upon immediately.

In negotiating forward contracts, the banks typically make it a practice to hedge these future transactions. The usual method by which banks protect themselves is to balance forward sales and purchases. Returning to our previous example, the bank which agreed to sell £5,000 in 60 days at \$2.80 can at the same time negotiate a contract to purchase £5,000 in 60 days at \$2.79.

In the event the banks cannot protect themselves by matching their forward purchases with forward sales, they may match their forward contracts with purchases and sales in the spot market. A bank which agrees to deliver £5,000 in 60 days can purchase £5,000 in the spot market and instruct its correspondent in Britain to use the funds in the British money market. By utilizing the funds in the British money market the United States bank loses the interest which would have been earned if the money was lent in America. However, the American bank earns interest in the British money market. If foreign balances earn a higher rate of return than short-term funds at home, the bank will sell forward exchange at a dis-

count from the spot rate. Conversely, if the short-term interest rate is higher at home than abroad, forward exchange will sell at a premium over the spot rate.

■ THE BALANCE OF INTERNATIONAL PAYMENTS

When we broaden our perspective, we find that the factors constituting the demand for and supply of foreign exchange are those which enter into the balance of international payments of a nation. The balance of international payments is a convenient device for recording all the economic transactions within a given period between the residents of one country and the residents of all other countries in the world. A comprehensive summary of all economic transactions between residents of the United States and the rest of the world in 1951 is portrayed in Table 56.

Balance of payments' accounting uses a double-entry system of recording accounts with the rest of the world. From the point of view of residents of the United States, all transactions which give rise to foreigners' claims on the United States are labeled imports or *debits*. All transactions which give rise to money claims of Americans on foreigners are called exports or *credits*. Since the balance of payments is drawn up in terms of debits and credits, if the entries are made correctly, the debits must equal the credits. Put in another way the balance of payments as a whole must necessarily balance.

In attempting to distinguish between debits and credits it may be helpful to associate exports with credits and imports with debits. As can be seen in Table 56, residents in the United States earned roughly \$20.1 billion in claims on abroad by exports of goods and services or in earnings on American-owned investments abroad.

Exports of merchandise by the residents of the United States to residents in foreign countries give rise to a money claim on foreigners by people in our country. The same is true of payments resulting from the use of American ships and airplanes. Tourist expenditures in the United States can be viewed as an export (sale) of American scenery, hotel, and other services. The use of American banking and insurance facilities by foreigners gives rise to money payments owed to Americans. Payments by foreign governments to their representatives in the United States can also be viewed as payments by foreign governments for goods and services consumed by their representatives in the United States. Interest and dividend payments to American residents result from the use of American capital located in foreign countries. Emigrant remittances to people

TABLE 56
BALANCE OF INTERNATIONAL PAYMENTS OF THE UNITED STATES
IN 1951

(In millions of dollars)

	Exports (credits)	Imports (debits)	Net exports (+) or imports (-)
Merchandise and service items			
Merchandise	\$15,424	\$11,663	\$+3,761
Transportation	1,495	917	+ 578
Travel	444	733	- 289
Miscellaneous services	872	1,398	- 526
Income on investments	1,905	400	+1,505
Total	<u>\$20,140</u>	<u>\$15,111</u>	<u>\$+5,029</u>
Unilateral transfers—gifts and grants (net)			
Private			\$- 405
Government			<u>-4,534</u>
Total			<u>\$-4,939</u>
United States capital—loans, etc. (net)			
Private long-term			\$- 781
Private short-term			- 113
Government long-term			- 140
Government short-term			<u>- 19</u>
Total			<u>\$-1,053</u>
Foreign capital (net)			
Long-term			\$- 514
Short-term			<u>+1,019</u>
Total			<u>\$+ 505</u>
Net increase in United States gold stock			\$- 53
Other transactions and residual			<u>- 511</u>
Total			<u>\$-5,029</u>

SOURCE: U. S. Department of Commerce.

in the United States have not bulked large in this country's balance of payments. These transactions are classified as credit items since they may be viewed as payments for goods and services consumed by American friends and relatives of foreign remitters. In recent years the United States government has received small sums of money as gifts from foreign governments; these payments (mainly reverse Lend Lease settlements) are credit items.

The student frequently finds it difficult to understand why a capital import is a credit item since our rule states that exports are credit items and imports are debit items. Perhaps the best way to view capital movements is to remember that a long-term capital import gives rise to acquisition of title to American stock and bonds by foreigners. In other words, a capital import is the result of American exports of stocks and bonds. When foreigners make direct investments in the United States by building plants, etc., in this country, we are importing capital but exporting the titles to these plants to foreign countries (hence, a credit item). When an American sells a security to a foreigner, this gives rise to a capital import. It is a credit item since we are exporting securities. The repayment by foreigners of loans previously made to them by this country is a credit item since we are receiving payment from foreigners in return for our exporting their securities to them.

By the same token short-term capital imports are credit items in our international accounts. If foreigners increase their balances with American banks, this transaction is a short-term capital import into the United States; it may be viewed as an export to foreigners of our promises to pay. Decreases in United States deposits abroad, decreases in our holdings of foreign commercial obligations, or foreign short-term government securities or decreases in open-book accounts owed to United States exporters are all short-term capital imports into the United States. These items are all credit items since they represent claims for money payments by this country on the rest of the world.

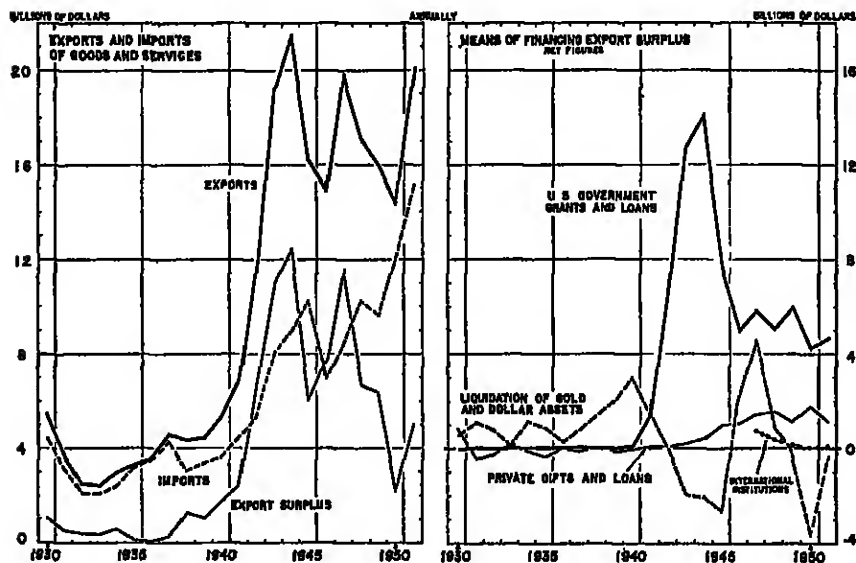
Exports of gold are the same as merchandise exports in the balance of international payments. Thus, an export of gold is a credit item. "Earmarking" gold is a method of transferring gold from one country to another by bookkeeping transactions without physical movement of the gold. Thus, gold movements are cheaper to execute. It should be remembered that for all practical purposes gold movements are conducted by central banks and only under license by the government. If there is a reduction in American gold on earmark abroad, this is equivalent to a gold export; hence, it is a credit item. Similarly, an increase in foreign earmarked gold in the United

States is equivalent to an increase in gold exports from the United States and is also a credit item.

The debit items in our balance of payment arise from foreigners' claims on residents of the United States. As is evident from Table 56, foreigners earned roughly \$15.1 billion of money claims on residents of this country by their exports of merchandise and services

FIGURE 54

UNITED STATES BALANCE OF PAYMENTS



Based on Department of Commerce Data.

SOURCE: Board of Governors of the Federal Reserve System.

to the United States. There is no point to reviewing the reason why these items are debits in the United States balance of payments since the reasoning is the reverse of the process explained above in connection with credit items on merchandise and service account. The unilateral transfers do require a word of explanation. A large sum of money is given to foreigners in the form of gifts and grants. The United States government has extended large grants to foreign governments. Many persons and institutions remit sums of money to friends, relatives, and needy persons abroad. These items are debits although people in the United States do not receive goods or services for which they are paying—hence the term unilateral transfer.

Capital exports are debit items. When private persons export

capital abroad on long term, they are importing securities. Thus, a capital export is an import of securities, hence a debit item. Long-term loans by our government to foreign citizens or governments are likewise capital exports, hence debit items. When foreigners return United States securities to this country, the transaction is a capital export (debit item) since we are importing our own securities and have to pay for them. Short-term capital exports include increases in our deposits abroad, increases in our holdings of commercial obligations or short-term government obligations, or increases in open-book accounts owing our exporters. These items are debit items since they represent claims for money payments by persons abroad on this country. In effect we have imported foreign promises to pay.

EQUILIBRIUM IN THE BALANCE OF INTERNATIONAL PAYMENTS

The reader should bear in mind that a nation's balance of payments must always balance. Debits must always equal credits if the entries are consistently made. A nation can make foreign payments in excess of its current receipts from foreigners by (1) exporting some of its accumulated gold stock, (2) drawing on accumulated foreign balances, (3) by borrowing abroad, (4) by receiving gifts from abroad, or (5) by some combination of the above. This point can be made clearer by reference to the United States international accounts in 1951.

In the year 1951 the United States exported merchandise and services having a total value of \$20.1 billion, and we imported merchandise and services having a total value of \$15.1 billion. Furthermore, foreign interests built up their dollar asset holdings in the United States by \$.5 billion. Thus, foreigners had to find means of payment of \$5.5 to finance their deficit on merchandise and service account (\$5.0 billion) plus their increased dollar holdings (\$.5) in this country. Where did the foreign interests get this purchasing power?

The United States government gave them \$4.5 billion on a free grant basis under provisions of the mutual aid programs, the mutual security programs, and other similar programs. Private persons and institutions sent \$.4 in remittances abroad. The federal government granted loans of over \$.1 billion to foreign borrowers, and private American interests increased their investments abroad by \$.9 billion. Foreigners shipped \$50 million in gold to this country.

In its dealings with the rest of the world the United States realized a net foreign investment of \$90 million in 1951. This foreign in-

vestment may be measured from the current accounts or the capital accounts of the balance of international payments as is shown in Table 57.

TABLE 57
UNITED STATES NET FOREIGN INVESTMENT, 1951
(In millions of dollars)

<i>Current Accounts</i>			
Receipts	Goods and services		\$20,140
less			
Payments	Goods and services	\$15,111	
	Net unilateral transfers	4,939	20,050
	Net foreign investment		\$ 90
<i>Capital Accounts</i>			
Net inflow of gold		\$ 53	
Net outflow of long-term capital		1,435	\$ 1,488
less			
Net inflow of short-term capital		\$ 887	
Other transactions and residual		511	1,398
	Net foreign investment		\$ 90

The annual output of this country (including goods and services exported) exceeded our current usage of goods and services (including imports) for consumption and capital formation here, for our governmental budget, and for charitable purposes abroad. The excess of output over usage—our net foreign investment—yielded an increment of financial assets, or gold and debts due to us from the world outside. For the world outside, of course, usage of current product exceeded output, and the net foreign disinvestment caused a loss of gold and an increase in debt to the United States. This excess of usage over output for the outside world—its net foreign disinvestment—is often termed the dollar shortage.*

While a nation's international accounts must always balance, its accounts need not be in equilibrium. If a nation's balance of payments shows a debit balance on merchandise and service account, its credit balance on other accounts must be sufficiently large so that total debits equal total credits. Thus, if the nation has a debit balance on merchandise and service account, it is either importing capital on long or short term, it is exporting gold, or it is receiving gifts from abroad.

* E. S. Shaw, *Money, Income, and Monetary Policy* (Chicago, 1950), p. 482.

The balance of payments is a useful tool in analyzing the changing international economic position of a country. While the total debits are always equal to the credits, the balance of payments enables an analyst to ascertain whether the nation is paying for its imports and other current payment transactions by exporting gold, drawing down its foreign assets, accumulating foreign liabilities, or receiving donations. Thus, we can refer to a nation's surplus or deficit on current account without denying the over-all equality of debits and credits in the total international accounts.

The deficit or surplus on current account does not necessarily indicate the changes in a country's capital position *vis à vis* the rest of the world. When exports to foreign countries represent donations such as government grants (for example, Marshall Plan aid or military assistance aids) and private gifts, no payment is received in return; thus, the capital account of the exporting country is not increased by these surplus exports. Similarly, the country receiving the grants will show receipts (debit items) in their international accounts; even though their current accounts show a debit surplus they will not have altered their international capital position since repayments are not required.

If a country's deficit on current account is financed by an inflow of long-term capital, the country's receipts of foreign exchange may be adequate to meet all current demands at the prevailing rate of exchange. Thus, the long-term capital account in the balance of payments includes all transfers of funds made for the purpose of permanent investment or transfer of funds which gives rise to a long-term capital claim on the capital importing country. The long-term capital account indicates the amount of funds deliberately intended during the year to be tied up for a considerable period in foreign investment.

On the other hand, if gifts and long-term capital imports are insufficient to overcome a nation's deficit on current account, the country will pay for its deficit by the export of gold or by importing short-term capital. The movements of gold and short-term capital are the items which equalize the total debits and total credits in a nation's international accounts. Thus, if a nation's balance of payments shows movements of gold and short-term capital, its accounts are said to be in disequilibrium even though the debits equal the credits. The disequilibrium may be temporary and self-corrective or it may be of longer duration in which case it is described as one of fundamental disequilibrium in the language of the International Monetary Fund.

Another way of stating the conditions of equilibrium in a nation's international account relates to our earlier discussion of net foreign investment. A nation's international accounts are in equilibrium if net foreign investment is zero or if it is positive, the deficit or surplus is financed by long-term private capital movements.

QUESTIONS AND PROBLEMS

1. a. What factors in foreign trade explain the wide use of bills of exchange and acceptance credits?
b. Do not the merits of trade and bankers' acceptances justify their use in domestic trade? Explain.
2. a. What advantages are afforded to the exporter by the use of a trade bill instead of an open-book account?
b. What advantages are afforded to the importer by the use of a commercial letter of credit instead of paying cash against documents?
c. By whom is the financing burden assumed in each case and in what manner?
3. The British Cotton Importers, Ltd. of Manchester has arranged to buy \$50,000 worth of cotton from Bullard and Bourne of Savannah, the transaction to be financed by means of a confirmed dollar letter of credit.
 - a. State specifically the banks in each country which may be called upon to handle the transaction.
 - b. Outline carefully the procedure followed by the importer in opening the letter of credit, tracing the letter of credit through its various stages until it is placed in the hands of Bullard and Bourne.
 - c. Show how the exporter draws his drafts and disposes of them. How soon can he secure his funds? Under what conditions?
 - d. How does the "exporting" bank dispose of the bills? Who is financing the transaction?
4. a. Point out the specific field of use of the revolving letter of credit.
b. "For practical purposes [authorities to purchase] may be considered in much the same light as a favorable credit report." (G. G. Huebner and R. L. Kramer, *Foreign Trade Principles and Practices*, rev. ed., New York, 1942, p. 454.) Explain why, indicating their weaknesses as contrasted with commercial letters of credit.
5. "After due allowance is made for interest and risk, the rates for all types of foreign exchange in one market at one time are equivalent." Illustrate and explain.
6. Explain how each of the following tends to affect the price of the pound sterling in New York:
 - a. American purchases of British securities.
 - b. An increase in the bank rate in England.
 - c. American tourist travel in England.
 - d. An increase in exports of tobacco to England.

- e. British interest payments to Americans.
- f. An import of Sheffield steel products from England.
- 7. a. A New York banker received word from his London correspondent that the cable rate in London on New York was \$2.80. He instructed his London correspondent to buy \$28,000 on New York and simultaneously bought 10,000 pounds on London at \$2.76. Compute his gross profit or loss.
- b. On a certain date the cable rate in New York on London was \$2.80, the rate in Amsterdam on London was 11 guilders per pound, and the rate in New York on Amsterdam was 26.5 cents per guilder. Would an arbitrage have been possible? If so, which currencies would you have bought and sold?
- 8. a. Why must the balance of international payments always balance?
- b. Does this mean that equilibrium must exist? In your answer, explain the conditions of equilibrium.
- c. From the data presented annually by the U. S. Department of Commerce in *The Balance of International Payments of the United States* tabulate the balance of international payments for each year beginning with 1946. Calculate the dollar shortage for the period, explaining your calculations.

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CHAPTER 22

The Process of International Adjustment

THE rates of exchange between any country's currency and the currencies of other countries necessarily affect the exports and imports of goods and services. If the exchange rate of the United States dollar falls, it takes more dollars to buy foreign currency. United States goods and services are cheaper for foreigners, and foreign goods are more expensive for residents of the United States. A fall in the United States dollar encourages United States exports and reduces imports into our country. The claims of the United States on the rest of the world tend to exceed the claims of the rest of the world on this country. The differences may be made good by gold exports to the United States, by a transfer to United States residents of dollar balances held in this country, or by a transfer of balances in other countries to United States ownership.

As we saw in our discussion of the balance of payments, a nation's international accounts are in equilibrium if its balance of payments does not show transfers of gold or short-term capital movements. The dollar would be in equilibrium with the rest of the world's currencies if the dollar exchange rate is such as to equalize receipts from and payments to foreigners without requiring transfers of gold or short-term balances between the United States and the rest of the world. Such a rate of exchange is said to be an equilibrium rate of exchange.

Defined in this sense, an equilibrium rate of exchange seldom exists since some movement of gold and some transfer of ownership

of short-term balances between countries is always taking place. The actual rate of exchange deviates above and below the equilibrium rate. As long as the deviations are moderate, the world will not witness protracted movements of gold and short-term balances in one direction. These movements will take place first in one direction and then in another.

Nations may attempt to achieve an equilibrium rate of exchange in one of two ways.¹ The exchange market may be "free" or "forced" and the exchange rate may be fixed or flexible. A "free" equilibrium rate of exchange is one which is attained by permitting everyone to buy or sell as much as he chooses. On the other hand, an equilibrium rate may be secured by "force," that is, by means of exchange control and other deliberate devices designed to reduce part of the demand for foreign currencies. If the rate of exchange is fixed, a country exposes itself to variation in the level of economic activity as the means of securing equilibrium in its international accounts. In a system of freely fluctuating exchange rates a nation may attempt to secure equilibrium in its international accounts by permitting exchange-rate variations to encourage or discourage imports and exports, depending upon whether its rate of exchange is too high or too low.

In the remainder of this chapter we shall examine exchange-rate behavior from one extreme position of relative fixity to the other of theoretically limitless fluctuations. This will be followed by a comparative analysis of exchange-rate behavior between a "free" exchange market and a "controlled" exchange market. While the study of exchange-rate behavior under an international gold standard system and under inconvertible-paper standards may be too far removed from the exchange-rate conditions prevailing in the postwar world, nevertheless, a complete understanding of these conditions should enable us to appraise the magnitude of the problems involved in our hybrid system of foreign exchanges synthesized in the International Monetary Fund. For, in many senses the operations of the Fund involve a compromise in the operating techniques of the gold standard and those of inconvertible-paper standards.

■ THE GOLD STANDARD

One outstanding characteristic of the gold standard is the relative stability of exchange rates that this international monetary system provides.

¹ This paragraph is based upon A. G. Hart, *Money, Debt and Economic Activity* (New York, 1948), p. 396.

MINT PAR AND THE GOLD POINTS

We shall now proceed to examine the reputed stability in the behavior of exchange rates under an international gold standard system. Between any two gold standard countries whose national currencies are tied to gold and which freely permit the export and import of gold at a fixed price, the exchange rate must, indeed, be relatively stable. The actual exchange rate oscillates above or below the mint par or the par of exchange, but it never exceeds the gold export point nor falls lower than the gold import point as long as both countries maintain the minimum conditions for the operation of a gold standard system. By *mint par*, or par of exchange, is meant the ratio between the weights of the pure gold content of the respective currencies. Thus, before the British devaluation on September 18, 1949, the par of exchange between the United States and the United Kingdom was £1 = \$4.03 as indicated below:

U. S. dollar	=	.88671	grams of fine gold
U. K. pound sterling	=	3.58134	grams of fine gold

Hence the mint par was: $\frac{3.58134}{.88671}$ or \$4.03

After the pound was devalued the mint par between the two currencies was £1 = \$2.80.

U. S. dollar	=	.88671	grams of fine gold
U. K. pound sterling	=	2.48828	grams of fine gold

Hence the mint par is: $\frac{2.48828}{.88671}$ or \$2.80

Between each pair of gold standard currencies the exchange rate hovers around the par of exchange but is delimited within the gold export point and the gold import point, for any deviation beyond these limits would evoke gold flows, thus correcting the deviation. The gold export point of the dollar is the par of exchange plus the cost of shipping gold from New York to London. The gold import point is the par of exchange minus the cost of shipping gold to New York from London. This cost would include the cost of packing, insurance, shipping, handling, and the interest lost while the gold was in transit. Prior to World War I the cost of gold shipments to London was \$.024 per pound, while shipments to New York cost \$.039 per pound. Given the par of exchange or the mint par, it is

clear that the fluctuations of exchange rates between this pair of countries must be confined within the narrow limits set by the gold points. However, the position of the gold points relative to the mint par varies with changes in the cost of shipping gold. Assuming the above costs of shipping gold, taking the mint par of £1 = \$2.80, we can establish the following gold points:

Gold export point (U. S.): $\$2.80 + .024 = \2.824

Gold import point (U. S.): $\$2.80 - .039 = \2.761

Accordingly, should the demand for sterling increase due to an import surplus by the United States or by American capital export, the exchange rate would presumably rise to \$2.824 but no more. When the rate of exchange is \$2.824, so long as gold is freely obtainable from the Treasury and is freely exportable, it will cost no more to purchase, say, \$280,000 worth of gold, which is equivalent to £100,000 in London, than to purchase bills of exchange in the exchange market in New York at the current sight rate of \$2.824 per pound (or \$282,400 as illustrated below). The computation would be as follows:

Cost of gold bought from Treasury through the New York Federal Reserve Bank	\$280,000
Cost of shipping gold: £100,000 \times \$.024	2,400
Total cost of the gold in London	<u>\$282,400</u>
Cost of purchasing £100,000 of sterling bills @ \$2.824 per pound in the United States	\$282,400

Conversely, if the United States demand for sterling falls relative to the supply thereof, the exchange rate would fall to the gold import point but would fall no lower, for at that point of \$2.761 per pound in New York, a United States bank would receive as much from a bill of exchange by converting foreign exchange into gold purchased in London and having it shipped to New York where it could be sold to the Treasury (through the Federal Reserve Bank of New York) for dollars at the mint par of £1 = \$2.80. It should be emphasized that as between two gold standard countries the exchange rate cannot deviate beyond the gold points, if, and only if (1) gold is bought and sold in each country at the fixed price equal to the value of each country's monetary unit, and (2) each country allows unhindered the export or import of gold whenever the exchange rate on foreign sight drafts exceeds the cost of shipping gold. Thus, all gold standard currencies are bound together by a fabric of closely knit threads of relatively stable exchange rates. The stabil-

ity of exchange rates provided under the gold standard facilitated the expansion of international trade and international investments among the countries linked by an international gold standard system.

PRICE-SPECIE-FLOW ANALYSIS

It remains now for us to examine briefly the mechanism of adjustment achieved through induced gold flows whenever a temporary imbalance in a country's international accounts gives rise to the needed adjustments. Suppose, for example, that the United States has an adverse balance in her current account with the United Kingdom (assuming for convenience of analysis that the United Kingdom includes the rest of the world) caused by an import surplus. This will cause an excess demand for sterling which in turn tends to raise the sterling exchange rate to the gold export point, engendering gold flows to the United Kingdom in an amount sufficient to liquidate the deficit. How does this gold flow restore equilibrium in the international accounts of the countries involved? The classical explanation of this adjustment in terms of the price-specie-flow mechanism presents an admirably simple and seemingly too smooth a process of adjustment. The price-specie-flow analysis, by inducing oscillating movements of gold between gold standard countries, contributes to the maintenance of stable exchange rates under the international gold standard. The export of gold from the United States produces a direct reduction in the country's total money stock. Furthermore, the withdrawal of gold reduces the gold reserve of the Federal Reserve System, and under a fractional-reserve banking system would tend to cause a multiple contraction of bank credit within the banking system. This induces a tightening of credit through higher interest rates, with a consequent contraction of investment, lower output, lower level of employment and income, and associated reductions in wages and prices. In other words, a condition of general deflation takes place within the gold-exporting country. In the United Kingdom, as recipient of the gold export, the reverse conditions are developing. There the total money stock is increased, credit expansion takes place based on the new gold reserves, interest rates fall engendering increased investment, output, employment, and income—that is, a general expansion in economic activity.

The preceding explanation contends that the gold flow from the United States will be reversed by the sequence of events implied above: the general deflation in the United States provides her with relatively lower costs enabling an expansion of exports to the United

Kingdom, which because of rising prices must undergo a contraction of her exports to the United States. As long as price disparities exist, gold movements will persist. The movement of gold will tend to decelerate the flow of exports and imports. Ultimately the direction of the gold flow will be reversed. Thus, in our example, the expansion of United States exports increases the demand for dollar exchange which raises the exchange rate in London on New York, which if it reaches or exceeds the British gold export point, will evoke an outflow of gold to the United States.

This explanation of the adjustment process has been criticized and has been improved upon by the modern theory of income. Taussig, himself a staunch disciple of the classical theory of adjustment, made empirical studies in the early 1920's which led him to doubt the adequacy of the price-specie-flow mechanism. He noticed that the process of adjustment in a country's international accounts would proceed with astounding rapidity even before price-cost adjustments had sufficient time to effect increased exports from the gold-exporting country. The general deflation envisaged by the above explanation would normally take a year or more before prices and wages (with their rigidities) would be sufficiently adjusted so as to evoke the volume of increased exports posited by the theory. The evidence indicated that gold flows ordinarily last for only a few months, at the most.

In recent years economists have attributed the smooth and rapid adjustment mechanism, not to the price-cost changes but to the induced movements of income and employment even in the absence of price changes. If net exports increase, the level of national income rises. The increased income gives rise to an increase in the demand for domestic as well as imported goods. In our example, the induced growing British prosperity initially evoked by United States imports, which led to a gold export to London, leads to a general increased demand for domestic products in Britain and also spills into increased imports from the United States, which tends to offset part of the initial increase in United States imports. This theory of the balance of payments adjustment is relatively independent of banking policy, which under the classical explanation must facilitate the effects of gold flows. It should be emphasized that it is the impact of the original American import surplus, which directly elicited the gold export, engendering thus the cumulative movement in British employment and income, which is largely responsible for the balance of payments adjustment.²

² "The Theory of International Trade," by Lloyd A. Metzler, in Howard S. Ellis (ed.), *A Survey of Contemporary Economics* (Philadelphia, 1948), pp. 215-228.

GOLD-EXCHANGE STANDARD

The gold-exchange standard is a variant of the full gold standard, and was widely used after World War I as a device to economize on the use of gold. Adopted by countries whose gold reserves were inadequate to maintain a full gold standard, the gold-exchange standard links the currency of the gold-exchange standard country with that of the country using gold. While the gold standard country maintains full convertibility between gold and its other kinds of money and buys and sells gold freely at a fixed price, the gold-exchange standard country substitutes, in place of convertibility of its currency into gold, the convertibility of domestic money into gold standard money. Its government is required to buy and sell, at a fixed price, all drafts drawn on a gold standard country. This implies, of course, that the country has on deposit funds or other securities with the gold standard country from which she can draw (or add to) for the purchase (or sale) of all drafts drawn on the gold standard country.

CRITICISM OF THE GOLD STANDARD

In 1914, World War I ended the brilliant 40-year record of stable exchange rates under the aegis of an international gold standard, and the seeds of various trade and exchange controls began to germinate into varying luxuriant growths. Many critics of the reconstructed gold standard of the interwar period began to cast doubts as to whether the price paid for exchange stability under the gold standard was not in fact too high. It was then alleged that exchange-rate stability was achieved at the expense of a general deflation of prices, wages, employment, and income in the gold-losing country, while the reverse conditions of general inflation were simultaneously developing in the gold-receiving country. In other words, international stability was achieved at the expense of domestic instability. To frame this objection more vividly, we may assume an extreme case in which country *A* is suffering from an economic depression manifested by substantial unemployment, drastic reduction in national income, falling prices and wages, plus a contraction in her imports from country *B*. It is held that as long as the mint par between them is maintained, either a drastic reduction in *B*'s prices (particularly export prices) or an abandonment of the gold standard will take place as a means of insulating *B* from the effects of induced deflation, internationally propagated by *A* through the mechanism of the gold standard. The monetary history of the inter-

war period indicates that many countries strongly believed in the impotency of the gold standard to solve their individual domestic economic problems. Thus, many countries resorted to multitudinous types of quantitative controls over international trade as well as control over their foreign exchanges.

In the absence of stability in the level of national income among the major trading nations, exchange-rate stability, instead of conducing to the automatic resumption of equilibrium in a country's international accounts, would tend to be the means through which depression in one country would spread into world-wide dimensions. For any two countries, it is true that this conclusion would be subject to the relative proportion in terms of the respective wealth and economic stability, as well as the proportion which exists between the export trade of each country and its national income. That is to say, the greater country *A* is relative to *B*, and the greater *B*'s export trade is relative to her national income, the more would *B* be highly sensitive to changes in *A*'s imports from *B*.

Furthermore, the critics also deplore the fact that the deflationary trend evoked by an outflow of gold would be considerably aggravated if the monetary authorities in the gold-receiving country did not forthwith adopt appropriate policies which expand its bank credit and increase prices and income therein. Neutralization of the accretions to the gold reserves by the gold-receiving country would delay, if not completely obviate, the automatic reversal of the gold flow alleged to be achieved through the price-cost-income disparities. Implicit, therefore, in the successful operation of the automatic adjustment under the gold standard, is the requirement that the monetary policies of each gold standard country must be so co-ordinated with those of others that not only will stable exchange rates and price levels be ensured, but also that business depressions will be prevented. Where these rigid conditions cannot be complied with, the critics contend that only through exchange-rate adjustments or changes in the parity of exchange between national currencies, can successful readjustments of drastic structural changes in international price relationships be achieved.

A substantial number of experts who favor free markets for foreign exchange maintain that an equilibrium rate of exchange could be best attained by abandoning the gold standard and resorting to free fluctuating exchange rates supported by appropriate domestic monetary policy. Others would support the utilization of the aforementioned procedure supplemented, if need be, by foreign exchange controls.

**EXCHANGE BETWEEN COUNTRIES
HAVING DISSIMILAR STANDARDS**

In the preceding pages we have observed that unless gold was freely sold or bought at a fixed price by each gold standard country, and further, unless each country permits freely the export and import of gold, the relative stability of exchange rates within the gold points could not be maintained. Accordingly, on a priori grounds, the exchange rate between a gold standard country and another country on an inconvertible-paper currency cannot be expected to restrict its fluctuations between the gold points, for the latter country has, in fact, no gold points. The principles governing the determination of free exchange rates between inconvertible-paper currencies apply equally well to the rates obtaining between a gold standard currency and an inconvertible-paper standard.

**■ EXCHANGE RATES UNDER INCONVERTIBLE-PAPER
CURRENCIES****FLUCTUATING EXCHANGE RATES**

As we saw above, the exchange rates between any pair of gold standard currencies cannot fluctuate beyond the gold points. In the case of inconvertible-paper currencies, however, the essential conditions which ensure exchange-rate stability are absent; therefore, it would appear that the exchange rate would conceivably fluctuate without limit. Whether in practice this conclusion is valid, or whether there is, in fact, some limit to such deviations, is our present concern. While fluctuating exchange rates differ from the stable rates under gold standard conditions, both have many features in common. A foreign exchange rate, being a price of a foreign currency in terms of the domestic currency, is the result of the interaction of supply and demand forces in the given foreign exchange market. In its behavior, an exchange rate resembles any other price obtaining in any given market.

The similarity, however, ends there. While the determinants of the elasticities of the demand and supply of a commodity are relatively simple, those which underlie the elasticities of the demand and supply of foreign exchange are comparatively more complex. In the case of a commodity, the elasticity of supply depends on the costs of production (supply being relatively elastic if costs are either constant or increase slowly with the expansion in output, and inelastic if costs rise rapidly with increases in output). The demand

for a commodity is relatively elastic if with any given price reduction, total purchases rise quite rapidly and the demand is inelastic if price reduction does not evoke any substantial increase in purchases.

The elasticities of the demand and supply of foreign exchange are, indeed, exceedingly more complex, for the relevant supply and demand curves embody the numerous items in a country's balance of payments. On the supply side, the costs embody not the cost of a single product, but the costs of numerous and diverse classes of internationally traded goods. On the demand side, the individual tastes and preferences include not only those of domestic but also those of foreign purchasers; the latter differ considerably by reason of cultural differences. Furthermore, in addition to the supply and demand forces on account of commodities, there are also complicating factors arising from the supply and demand conditions obtaining in the international investment markets involving the sale of securities and the payment of interest and dividends to foreign investors. Finally, the most pervasive difference lies in the fact that while in the case of a commodity, price changes affect only the sellers and buyers of each commodity, a change in exchange rates affects not only exports and imports but also may change the quantum of profits or losses derived in international trade and international investments which are calculated on the basis of price-cost differences. Accordingly, to say that the ruling exchange rate, under inconvertible-paper currencies, is that rate which brings the supply and demand for foreign exchange into balance, is quite an oversimplification, and often is not helpful. This point can be elucidated by examining the mechanism of adjustment in international accounts through exchange-rate fluctuations.

ADJUSTMENT THROUGH EXCHANGE-RATE FLUCTUATION

Given a temporary disequilibrium in a nation's balance of payments, how is the imbalance corrected? The explanation is phrased in terms similar to the traditional demand and supply analysis, when an equilibrium price is changed by reason of changes in the supply or demand forces or both. In the event of a disturbance in a country's balance of payments equilibrium—for example, a deficit in its current international accounts—its demand for foreign exchange will exceed its supply, and exchange rates will rise accordingly. By how much the rate will rise depends upon the relative elasticities of the supply and demand curves for foreign exchange. In general, it may be stated that the greater the elasticity of the

supply of foreign exchange, the less will be the resulting increase in the rate produced by any given increase in the demand, and the less the fall in exchange rate caused by any given decrease in demand. Similarly, the greater the elasticity of the demand for foreign exchange, the less will be the fluctuations in foreign exchange rates arising out of any given changes in the supply.³

THE DOCTRINE OF PURCHASING-POWER PARITY

Between 1919 and 1923 various degrees of inflation pervaded most of the countries of Europe, thereby changing the international relationship of price levels among the trading countries. It was in this setting that the doctrine of purchasing-power parity was revived by Gustav Cassel.⁴ This doctrine states that between countries on inconvertible-paper standards there exists a basic rate of exchange called the purchasing-power par around which the actual daily rates oscillate, but toward which the rates tend to settle as the equilibrium rate.⁵ The purchasing-power par, thus, resembles the focal position of the mint par under the gold standard. Since the demand for a foreign currency, according to this theory, is derived from its purchasing power, the exchange rate between any two inconvertible-paper standards should be determined by the ratio of the relative purchasing power of each currency in its own country. That exchange rate which reflects the relative purchasing power of the two currencies is regarded as the equilibrium rate, as long as the purchasing power remains unaltered. It is asserted by this theory that any divergence of the actual rate from the equilibrium rate undervalues one currency relative to the other, thereby eventually leading to an export surplus for the undervalued currency, and a consequent increase in the value of that currency in the exchange market. This follows from the comparatively greater demand for that currency relative to its falling supply caused by reduced imports, which in turn is due to the high price of the overvalued currency.

³ See Paul T. Ellsworth, *The International Economy* (New York, 1950), pp. 555-579, for an interesting analysis of the comparative effects of various elasticities in the supply and demand curves for foreign exchange.

⁴ James W. Angell, *The Theory of International Prices* (Cambridge, 1926), pp. 52, 186.

⁵ A true equilibrium rate of exchange is one which equilibrates a nation's international accounts without resorting to import restrictions, nor permitting mass unemployment. Such equilibrium should be achieved for a period ranging from 5-7 years during which there should be no significant changes in international reserves. See: Ragnar Nurkse, "Conditions of International Equilibrium," in the American Economic Association's *Readings in the Theory of International Trade* (Philadelphia, 1949), pp. 4-12.

Disparities of the Actual Exchange Rates from the Purchasing-Power Parity Given any purchasing-power parity between any pair of countries, why does not the rate between two inconvertible currencies deviate far above the parity or well below it? The answer lies in the fact that if the actual exchange rate approximates the purchasing-power parity (in which case it amounts to an equilibrium rate), then the supply of and the demand for foreign exchange are also in equilibrium. In other words, any marked deviation of the actual rate from this equilibrium rate evokes corrective forces which will tend to bring the rate toward the equilibrium position.

The explanation of the adjustment process is as follows. Suppose, for example, that as of January 1, 1951, the index of the price level in the United States and in the United Kingdom (which are both assumed to be on an inconvertible-paper standard) was 100 and 120, respectively, and that the exchange rate which equalizes the purchasing power of the two currencies was $\text{£}1 = \$2.80$ —i.e., this is also the rate which brings equilibrium in the international accounts of each country. Now, assume that a year later, on January 1, 1952, the price levels have changed to 120 and 140, respectively, but that the prevailing exchange rate is maintained at the old rate of $\text{£}1 = \$2.80$. At the later date the new purchasing-power parity is $\text{£}1 = \$2.40$, that is, $(120 \div 140)\$2.80$ or $\$2.40$, as compared to the old parity of $\text{£}1 = \$2.80$. In the above illustration sterling is now considered overvalued by almost 17 percent, while conversely the dollar is undervalued to the same extent.

In these circumstances, the market rate of exchange tends to make United States exports relatively cheaper than British exports, which is merely another way of saying that at the overvalued sterling, the British market is a good place in which to sell American goods, but a poor place in which to buy. The net effect of the over- and undervaluation between the two currencies will be a tendency for a United States export surplus to develop, leading to an excess of demand for dollars relative to its declining supply, since the high price of sterling has cut down American imports from Britain. By reason of the simultaneous dual forces operating in both the commodity and exchange markets in the two paper standard countries, the net deficit in British current account will tend to generate forces acting through the exchange market which will correct the adverse balance. Thus, if these forces drive the actual rate of $\text{£}1 = \$2.80$ closer to the purchasing power parity rate of $\text{£}1 = \$2.40$ and ultimately to the rate of $\text{£}1 = \$2.40$, the dollar will buy as much goods and services in the United States as it would in England if exchanged for sterling.

Conversely, should the actual exchange rates fall below the new

parity rate of £1 = \$2.40, say to \$2.00 (assuming the parity remains unaltered), then this would result in an undervaluation of sterling relative to dollars. If sterling is undervalued, this would lead to an export surplus for Britain or a greater demand by the United States for sterling relative to its dwindling supply. The reduced supply of sterling would be attributable to the fact that the high price of the dollar has forced a curtailment of British imports from the United States. The supply and demand disparities thus drive the exchange rate higher so that more dollars will increasingly have to be paid for each pound and in the process will bring the actual rate closer to £1 = \$2.40.

Thus, despite the absence of limiting gold points, our analysis reveals that wide deviations of the actual market rates of exchange from the purchasing-power parity rate immediately evoke corrective forces reacting on the country's current account in such manner that an exchange rate which overvalues one currency (and simultaneously undervalues the other) induces the flow of commodity exports toward the overvalued currency. This condition is translated into an increased demand for the undervalued currency with the result that the exchange rate on the overvalued currency falls and the actual rate more closely approaches the parity rate.

In addition to these corrective forces caused by the induced movements of goods, there are other forces caused by speculative purchases of foreign currencies, based on the expectation that governments, in general, have not allowed their national currencies to depreciate for any protracted periods in the foreign exchange markets. Granted that such a confidence exists, it may be categorically stated that short-term funds may be employed on the speculation that when the exchange rate has veered abnormally from the parity rate, the probabilities that it will reverse itself toward the normal rate increase commensurately. Such speculative transactions, therefore, tend to reduce the amplitude of the exchange-rate deviations.

However plausible the above theoretical analysis may seem, it is, nevertheless, an historical fact that exchange rates have at various times, and for protracted periods, significantly veered away from the purchasing-power parity. Thus, Cassel recognizes two types of deviations: permanent and temporary. *Permanent deviations* of actual rates from the "normal rate" determined by the comparative price levels, result whenever and wherever export restrictions or import restrictions impede the flow of trade in one direction more than in another. Export restrictions tend to lower the exchange value of the currency of the country imposing the restrictions, while import restrictions tend to raise the rate on that nation's currency. In the

former case, the demand for the currency of the restricting country falls relative to its supply, and hence the exchange rate falls, while the opposite holds in the latter case. As long as the trade restrictions are enforced, the automatic adjustments we have observed above will be impotent to correct the disequilibrium rate, for the trade restrictions will directly nullify the needed readjustments from operating.

There are also numerous *temporary deviations* from the parity rate which may be caused by fiscal and monetary policies which generate inflationary conditions, or encourage intense speculation in a depreciated currency. In the case where "open inflation" is prevalent, holders of the inflated currency may dump it immediately in the foreign exchange market, while foreign debtors expecting further external depreciation of the inflated currency postpone repayment of their debts to that country. Thus, a double-edged blade cuts the value of the currency in the exchange market, that is, a sudden increased supply accompanied by a depressed demand.

Criticism of the Doctrine of Purchasing-Power Parity Before appraising this theory, it may be well to distinguish the two forms in which it has been propounded. The *absolute* form states that the equilibrium rate for any given time is determined by the relative purchasing power of the two currencies compared. If, on the average, one pound sterling buys as much in England as \$2.80 buys in the United States, the equilibrium rate of exchange between the two currencies is $\text{£}1 = \$2.80$. The purchasing-power parity theory can also be used to relate changes in prices to a changing equilibrium rate of exchange. In its *comparative* form the theory states that fluctuations in the purchasing power of each currency must cause corresponding proportional changes in the equilibrium exchange rate.

The validity of the absolute form of the theory depends upon the improbable assumption that all goods and services produced in each country flowed without cost between them. But, as is abundantly evident, great quantities of commodities cannot be transported without cost, and even then many do not flow at all in world commerce. These observations would not necessarily invalidate the comparative form of purchasing-power parity theory.

Although the index numbers used to calculate the purchasing-power parity may include both domestic and internationally traded goods, as long as the prices of both classes of commodities move in unison, the resulting price ratio changes will evoke proportional changes in the equilibrium rate. The comparative form of the theory reveals that it is dependent on the highly improbable assumption

that the prices of the two groups of goods move in unison, and not disproportionately. The unrealistic assumption of an unvarying price structure in the face of major shifts in the price level is contrary to the observed historical behavior of the domestic, as well as the international, price structure. Changes in the price level, upward or downward, invariably involve simultaneous unequal changes in the prices of individual commodities and varying changes in prices between industries; in fact, some prices move in a direction opposite to the general trend of prices. In these circumstances, the inequality in the shifts of the individual prices of internationally traded commodities would result in a different total demand for and supply of foreign exchange, thereby inducing a different equilibrium exchange rate.

Another apparent flaw in the comparative form of the purchasing-power doctrine is directed to its basic assumption that the underlying reason for the demand for any foreign currency is its ability to command goods within its home country. It is, however, obvious that one demands a foreign currency for the purchase of certain internationally traded goods, not for all goods produced within the country whose currency is demanded. Moreover, since an exchange rate reflects the demand and the supply for a foreign currency, which in turn is based upon the purchase and sale of specific goods, it is clear that for an exchange rate to reflect the relative purchasing power of two currencies, the only relevant price is the price of each commodity which creates the demand for and supply of foreign exchange. The truth of this statement may easily be proved if we imagine a situation where the individual prices do change, although the price level remains unchanged, itself. In this case, it is clear that the relative changes in individual commodity prices would surely evoke an equilibrium exchange rate entirely different from that approximated from the purchasing-power parity.

One of the greatest problems arising out of the comparative form of the doctrine is the choice of what index to use and what commodities to include in ascertaining the purchasing-power parity. In this respect, one is readily tempted to suggest that an index number including only the prices of internationally traded goods would be the most appropriate. This would, however, be the worst choice, since under free trade conditions, the price of internationally traded goods tends to equality in all trading countries, abstracting from transportation costs. Given the actual exchange rates (and transportation costs), one can determine the price of imports or exports, that is, one can ascertain what goods and services would enter international commerce. But, the doctrine puts the cart before the horse,

by asserting that the changes in the national price levels determine the required changes in the equilibrium exchange rate. But how can one know what goods are internationally traded until the exchange rate, and hence the prices of goods, are ascertained? Furthermore, the number and variety of traded goods, ranging from necessities to the most frivolous luxuries depend upon, and change with, fluctuations in exchange rates.

Finally, the purchasing-power parity doctrine completely ignores the effects of capital movements which, although they do not enter into the index of prices, are important, nevertheless, in affecting the supply of and demand for foreign exchange, and the resulting exchange rate. Suppose, for example, that country *A* invests in the securities of country *B*. This will increase the supply of *A*'s currency available to *B*, or what is the same thing viewed from a different angle, increases *A*'s demand for *B*'s currency by the amount of the loan, and may tend (though not necessarily) to raise the exchange rate on *A*. Only if the capital outflow is more or less uniform and not sporadic, and if trade is unimpeded by restrictions, the ordinary fall in the exchange rate caused by the capital outflow may evoke a relatively increased flow of trade in a direction opposite to the capital flow. In these circumstances the foreign exchange rate cannot deviate far from the equilibrium rate determined by the purchasing-power parity.

It would appear from these objections to the purchasing-power parity doctrine that at best the purchasing-power par can be utilized by nations on an inconvertible-paper standard as a "compass" with which to locate the *approximate bearings* of the equilibrium rate of exchange between any pair of countries.

■ EXCHANGE CONTROL

NATURE OF EXCHANGE CONTROL

Broadly conceived, exchange control may include any measures employed by the government to influence the behavior of exchange rates. Thus defined, it would embrace the establishment and maintenance of an international gold standard, for that would ensure stability of exchange rates within the gold points as between gold standard countries, and it would include also such central bank action as essential to facilitate gold movements and the automatic reversal thereof. The generally accepted meaning of exchange control, however, and the one used here is considerably narrower than the above. We shall include in exchange control only those

measures which directly influence exchange rates by affecting the demand and supply of foreign exchange. Exchange control policies may take the form of *government intervention* or direct action in the foreign exchange market and *exchange restrictions* which aim to maintain a given exchange rate by reducing the demand for, or by increasing the supply of, the foreign money. The severity, scope, and effectiveness of these measures vary considerably as between countries and even within the same country at different periods.

Intervention may be passive as exemplified by the pegging of the value of a nation's currency, or it may be active, in which case, direct purchases and sales of foreign money are undertaken by the government or its authorized agency. The active support of the pound and the dollar in the 1930's by the stabilization operations of the British and the United States governments exemplify positive maintenance of the desired value of a nation's money, or prevention of its depreciation.

The other and more potent type of control consists of foreign exchange restrictions involving diverse types of rules and regulations affecting foreign exchange market operations. Such restrictive measures are deliberately intended to reduce the demand for, and to a lesser extent increase the supply of, foreign exchange. Accordingly, these measures are usually directed toward the basic sources of the supply and demand for foreign money. Exchange restrictions have been applied with varying rigor since World War I when many governments directly imposed restrictions on private transactions in the exchange markets. The impact of such restrictions was specifically directed to (1) the *objectives* for which foreign exchange was bought and sold, (2) the *amount* of exchange involved, and (3) the *rate* at which exchange was bought and sold. The short-lived restoration of the gold standard (1925-1931) resulted in a weakening of exchange restrictions; during the depression following 1929 these restrictions were revived with increased vigor. Retained in World War II, these measures have been only slowly relaxed since then.

Exchange control is directed at the heart of all international payments—the price of foreign money in terms of a nation's money. Thus, exchange control is more comprehensive in its direct and indirect effects upon world commerce than all types of trade restrictions. The latter embrace only trade in commodities, while the former encompasses all forms of international economic and financial transactions which involve payment across national boundaries. This explains why some countries have adopted only trade or foreign exchange controls, and still others have combined both in the attempt not only to improve their balance of trade, but also to correct

an adverse balance of payments, an abnormal outflow of capital, and capital flight from or into the country. Indeed, exchange control has been the most rigorous instrument of commercial policy. It is so pervasive that it embraces all the component items in a country's balance of payments, and is therefore so powerful an instrument of economic warfare that it was adopted by virtually all major trading nations during the 1930's.

OBJECTIVES

Although resort to exchange control has been widespread, the specific objectives of all countries which have adopted it are not necessarily identical, for the economic, financial, and political ambitions of countries vary in their scope, intensity, and complexity, not to mention the adequacy (or lack) of natural and human resources to support each nation's short-run and long-run objectives. Nevertheless, exchange control has been generally adopted to achieve the following objectives:

1. To avert abnormal, destabilizing capital movements (both inflow and outflow) particularly the nefarious type known as capital flight, or "hot money."
2. To stabilize the external value of a country's money.
3. To conserve its gold, foreign assets, and foreign exchange reserves.
4. To maintain the people's confidence in their own money.
5. Other objectives:
 - a. To prevent the enemy or its agents during wartime from illegally absconding with supplies of the nation's money or its foreign exchange.
 - b. To insulate the domestic economy from the impact of external deflation pending the completion of necessary international adjustments.
 - c. To serve as a potent retaliatory tool against countries invoking exchange control, tariffs, quotas, embargoes, and other types of trade restrictions.

The first objective implies that normal short-term and long-term capital movements are permitted, but the concurrent appearance of "black markets" where illegal exchange transactions are carried on render the administration of exchange control considerably more complicated and costly than is ordinarily conceived. "Black" exchange markets have become so ingeniously and cunningly operated that nothing except the most drastic legal enforcement has discour-

aged their illicit operations. Whether this difficulty of policing has led to the legalization of black markets in some countries, in order to increase their susceptibility to regulation and control is uncertain. To a country with heavy external debts, an increase in the foreign exchange rates would increase the cost of servicing its debts in terms of its relatively depreciated money. An increase in the exchange rate will also increase the cost of a nation's imports and may as a result increase her people's cost of living and the cost of her exports where imported raw materials and semimanufactured products enter into her exports. To a country at war the complete mobilization and conservation of all her foreign exchange reserves may have a fundamental bearing upon the efficiency of her domestic war economy.

EXCHANGE CONTROL TECHNIQUE

The techniques which have been developed for the administration of exchange control fall readily into two broad groups depending upon whether the country imposing the controls wishes to have a mild or rigorous degree of exchange restrictions. The latter type would virtually embrace all international transactions involving foreign payments. Regardless of the rigor or mildness of the measures adopted, exchange control involves control over the sources of the supply of and the demand for foreign exchange, including (1) imports and exports of goods, (2) capital and capital service items, and (3) speculative transactions.

The moderate type of exchange restrictions is committed to the prevention of sharp fluctuations of the exchange rates through the prohibition of abnormal capital flows and speculation in the exchange markets. But, it is obvious that any capital movement of sizable proportions can easily degenerate to dimensions not easily susceptible to any but the most drastic and comprehensive restrictive measures. Consequently, many countries have been compelled to establish more or less complete control over their foreign exchange markets.

Exchange restrictions of the thoroughgoing type involve an outright government monopoly of the exchange market. Through its agency, the government establishes an official rate at which all transactions must be negotiated. Then it controls the supply of foreign exchange by requiring all exporters and others who hold foreign exchange to surrender all (or in some cases most) of it to the control agency at the specified rate of exchange. In this connection, the residents of the country who own property, foreign balances, or

other property within the blocking country, or for making partial payments for the blocking country's exports. Blocked accounts were used by the Germans under standstill agreements in 1931. Subsequent refinements in the techniques of administering blocked accounts, in conjunction with the maintenance of an overvalued currency, enabled the Germans to pervert its use to an aggressive weapon to benefit Germany at the expense of economically weaker countries.

United States Control of Foreign Funds Prior to the entry of the United States into World War II, a system resembling blocked accounts was established in this country by an Executive Order issued on April 10, 1940. Unless otherwise permitted by the Secretary of the Treasury, all foreign exchange transactions, gold shipments, and transactions on account of "evidences of indebtedness and evidences of ownership" with respect to other property of Norway and Denmark were prohibited. The intent of this "blocking" and impounding of such foreign-owned property located in the United States was to protect the interests of the governments and peoples concerned, after their conquest by Germany. By another executive order issued on June 14, 1941, the control of foreign funds was expanded considerably to "block" all countries of continental Europe not formerly blocked, including Germany and Italy. Only in those cases where it was clear that transactions with blocked countries would not aid the enemy countries nor injure American interests and those of her allies, were special permits granted by the United States Treasury for expenditures out of blocked accounts.

Exchange Rationing Whether used independently or in conjunction with blocked accounts, exchange rationing offers an effective method for balancing a country's international receipts and payments. Exchange rationing requires for its operation the establishment of some agency charged with the administration of the system adopted. The agency establishes official rates at which it buys and sells foreign exchange. A comprehensive exchange rationing would require all holders or recipients of foreign exchange to sell their foreign currencies to the agency at the official buying rate which is generally slightly less than the selling rate. A less rigorous system would require that holders of foreign moneys sell only a part of their holdings to the agency, holding the remainder to be disposed of at their own discretion. All holders of approved import operations must apply to the agency for the purchase of all or a portion of their needed foreign exchange. Some countries have permitted the simultaneous development of a free exchange market where *free rates* are generally higher than the corresponding official rates.

However, governments have encouraged free markets where certain export commodities could only be profitably exported at the free exchange rate. Nonessential imports have also been permitted at the considerably higher free market rates, in the belief that the high rates, *per se*, would suffice to dissuade most importers.

The spread between the buying and the selling rate pays administrative costs of the system and yields a profit to the government. These profits vary according to the profit predilection of the governments concerned. The profit derived by the government of Chile, from this source, has ranged from 30 percent to 122 percent of the foreign exchange sales.⁶

Exchange Stabilization Funds An exchange stabilization fund consists of a substantial reserve of gold and a nation's currency, out of which the government can directly influence the exchange rates by making purchases or sales of foreign exchange, in amounts sufficient to produce the desired behavior of foreign exchange rates. It should be emphasized that stabilization operations do not disrupt the structure of a free exchange market. In the main, stabilization operations have been confined to preventing abnormal exchange rate fluctuations. However, such funds could be (and have been) used to maintain an undervalued (or overvalued) currency which makes all other currencies relatively overvalued (or undervalued), thereby giving that nation an export advantage (import advantage) which is gained at the expense of other countries.

To accomplish its objectives, an exchange stabilization fund must have at its disposal an adequate reserve of both foreign money and its own money. Its foreign exchange reserve is an index of its positive power to forestall a rise in foreign exchange rates. Similarly, it must possess ample reserves of its own money with which to buy foreign money to prevent a substantial fall in its foreign exchange rates when that is inimical to the interest of the stabilizing country. Since the operations of a stabilization fund are basically determined unilaterally by one government, its operations in maintaining exchange rates at a certain level may work to the disadvantage of another country. Such a condition may give rise to a "currency" war. In order to avert such developments many countries have resorted to bilateral and to multilateral exchange control.

BILATERAL AND MULTILATERAL EXCHANGE CONTROL

Cooperative Management of Stabilization Funds
Since the advantages ensuing from a unilateral exchange control,

⁶ Ellsworth, *op. cit.*, p. 628.

in the form of stabilization operations are necessarily short lived as long as other countries are sensitive to the deflationary trends which may be induced by the offensive use of stabilization funds, cooperation in the management and operation of such funds developed between two or more countries. Hence, we have bilateral exchange control, exemplified notably by clearing agreements and payments agreements under which two contracting governments agree to administer their exchange control machinery to their mutual advantage. Such advantages accruing to each pair of countries are considerably magnified where the agreement involves three or more countries, creating thereby a multilateral exchange control system. Because of the difficulty of compromising divergent interests, this type of advanced cooperative control has been relatively uncommon. The Tripartite Agreement represented the only important development before the establishment of the International Monetary Fund. Originally established in September 25, 1936, among the United States, Great Britain, and France, it was later enlarged to include the Netherlands, Belgium, and Switzerland. The agreement provided for mutual cooperation among the six members for the maintenance of stable exchange rates and to avoid any attempts at currency depreciation. World War II prevented the development of this cooperative venture.

Clearing Agreements A clearing agreement is a contractual arrangement between two governments by which each pays its own exporters in its own money drawn from a fund built up from the payments made to it by its own importers. Generally, only payments and receipts arising out of merchandise trade are covered by these agreements although they could, with increasing difficulty, include those payments and receipts arising out of services and to a lesser extent some capital transactions. The inherent nature of these agreements virtually suspends the normal foreign exchange market operations, and where the agreement extends to cover all the items in a country's balance of payments, then the exchange market completely disappears.

Certain important points require mutual agreement between the contracting governments. First, it is necessary to establish a system of priorities with respect to payments which may be made out of the fund. Part of the fund will be allocated for the payment of merchandise exports of each country, another part will be used to pay the debts and capital service items due between them, while another portion may be used to pay "invisible" items. Usually the agreement stipulates an exchange rate for converting one currency into the other. Finally, provision is made for periodic clearance of

any deficit or surplus between the contracting governments' funds.

Payment Agreements Unlike clearing agreements, payment agreements do not bypass the foreign exchange markets. To ensure the success of this type of agreement, a fixed ratio of exports to imports between the two contracting countries is established for the duration of the contract. This ratio enables the attainment of a close balance in the international receipts and payments of each country, thus obviating the need to settle large balances. These agreements have originally been initiated by a creditor country in order to ensure the financial capacity of the debtor country to meet the interest, dividend, and amortization requirements on its outstanding securities held by the creditor country's investors.

Payment agreements have usually been concluded between a free exchange (creditor) country and a controlled exchange (debtor) country. The debtor agrees to ration its foreign exchange derived from its exports to the creditor country in order that it can meet all of the obligations owed to the creditor country. Usually the parties agree that the available foreign exchange will be allocated by the debtor to pay for (1) imports from the creditor country, (2) debts and capital service items due to the creditor, and (3) any balance is usually made available to be used by the debtor in its own discretion. Since imports by the debtor country must be paid for with foreign exchange, there is no likelihood of the accumulation of clearing balances in either country—an event which usually happens in the case of clearing agreements. In those cases where the creditor country is a substantial buyer of the debtor's exports, the latter country is more likely to abide strictly by the terms of the agreement for fear that the creditor country may shift its trade to the disadvantage of the debtor country.

QUESTIONS AND PROBLEMS

1. "The gold standard requires the domestic economy to conform to the state of a country's international balance, and leaves no freedom for a domestic policy inconsistent with the external position. Unlike the gold standard, fluctuating exchange rates, however, allow a country to pursue the domestic policy it desires, regardless of the balance of international payments."
 - a. Explain the basis for each statement.
 - b. Is the contrast actually as sharp as stated? Explain.
2. "Under modern monetary conditions gold is so far removed from any close tie-up with the credit superstructure that one can scarcely speak of any quantitative relation." (A. H. Hansen, *Full Recovery or Stagnation?* New York, 1938, p. 320.)

- a. If this view is correct, how must the price-specie-flow analysis of classical economics be modified?
- b. What then is the role or function of gold movements?
3. "The devaluation [January 31, 1934] had little discernible effect on the domestic price level, taking effect almost exclusively on the foreign exchanges, which naturally followed the change in the metal content." (J. M. Clark, *Social Control of Business*, 2d ed., New York, 1939, p. 430.)
 - a. Explain the statement.
 - b. Explain how devaluation of our monetary unit affected the foreign exchanges.
4. a. What effect would you expect the institution of the American silver purchase policy to have in the rate of exchange in New York on Shanghai?
 - b. Explain what effect the imposition of tariff barriers would have on the soundness of the purchasing-power parity doctrine.
 - c. Is the purchasing-power parity doctrine applicable as an explanation of foreign exchange rates to countries on the gold standard? Why or why not?
5. "Exchange control accomplishes the aim of the gold standard—stability of the foreign exchange rates—while still permitting freedom in domestic policy."
 - a. Explain how.
 - b. Is the dual purpose accomplished without creating other objectionable consequences?
6. "The result of exchange control in various cases has been to create multiple currency systems in which each of the different forms of money may be used only for specified purposes and in which there is in effect a system of parallel monetary standards rather than a single standard."
 - a. How could such a system help Germany in the 1930's?
 - b. Great Britain more recently?
7. "The British [Stabilization] Fund was established to *check violent fluctuations in the sterling-dollar rate*, but it has come to serve in other directions as well. As far as possible it *acts to neutralize heavy purchases of gold and the accumulation of sterling bank deposits by outsiders*." (W. H. Schubart, "A Discussion of Foreign Exchange and Related Problems," in G. B. Roberts, ed., *A Forum on Finance*, New York, 1940, pp. 31-32.)
 - a. Explain how the Fund could perform the functions italicized in the above statement.
 - b. What are the limits to the performance of these duties?
8. a. During the earlier 1930's both the British and the American Stabilization Funds had as an important objective prevention of the appreciation of the local currency in terms of foreign currencies. Could they exercise permanent instead of merely temporary influence on the level of rates?

- b. The original assets of the British Fund consisted of government securities while the American Fund was initially given gold. What effect would this difference have on the technical operations of each Fund in the money and foreign exchange markets?
9. Some have claimed that exchange clearing should properly be regarded as an attempt to escape the effects of exchange restriction, rather than as a form of exchange restriction. Explain.

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CHAPTER 23

Postwar International Monetary Reconstruction

This chapter starts with a brief review of international monetary relationships in the interwar period. The historical review is designed to provide insights into the measures taken after World War II to deal directly with the pervasive, world-wide problem of international disequilibrium.

■ INTERNATIONAL MONETARY RELATIONSHIPS IN THE INTERWAR PERIOD

The century of relative peace up to 1914, the existence of a common ideology and a liberal viewpoint on socio-political-economic questions, and a rapidly growing population were favorable to the unique growth of international commerce and finance. The international gold standard contributed to the automaticity of the process of equilibrium in the balance of payments of trading nations, implemented only by the flow of short-term credits and gold movement. The international gold standard provided an international monetary system linking together international economies into an integrated world trading system characterized by relatively stable foreign exchange rates and flexible prices.

World War I, however, wreaked havoc upon this integrated world commerce and upset the equilibrium in international payments. In 1914 the gold standard as a smoothly working process

disappeared from history. Whether it will ever return is conjectural. It was generally held after World War I that all we had to do was to restore this monetary standard, and it would operate as before. However, attempts at restoration in the twenties failed.

It is helpful to review the history of international monetary relations between 1918-1938, dividing them not so much into chronological periods as into mistakes from which lessons could be learned on which to base the post-World War II international monetary system. Each of the periods is an illustration of how the forces of disequilibrium are likely to upset—and if they are strong enough, to ruin entirely—any system of international monetary settlement.¹

1918-1922

The lesson of the first period, lasting roughly from 1918-1922, is that the reconstruction needs of a war-torn continent should not be supplied by a speculative inflow of capital. The monetary units of those nations which had suffered most from the war and therefore had experienced the greatest degree of inflation, as well as of those nations which were required to pay large sums in reparations, depreciated relative to nations like the United States, whose financial system had not been seriously affected. Private capital (mainly from the United States and Great Britain) expecting that the "depreciated" currencies would appreciate to "normal" levels with the return of more "normal" conditions, took advantage of the low dollar and sterling prices prevailing and speculatively purchased securities and property in Europe. This inflow of foreign money served to support the falling European currencies. However, the forces of depreciation (mainly the shortage of goods and the recurring budgetary deficits) were too powerful to be stopped. As currencies continued to depreciate, it soon became apparent that the hoped-for restoration of "normality" was indeed remote. As foreign investors sought to rectify their errors, there ensued a rush to liquidate investments in foreign countries, which only served to aggravate the currency depreciation. Continued attempts by the European monetary authorities to correct the disequilibrium by further depreciation merely served to magnify the disequilibrium. To the reaction of foreign capital was added the exodus of domestic capital, which put further pressure on the foreign exchange position of the currency. Stabilization of the currency became imperative. Attempts at achieving equilibrium through a freely fluctuating

¹ The material in this section is taken from E. Shapiro and E. Solomon, "International Monetary Reaction," *The Southern Economic Journal* (January, 1950).

foreign exchange rate in later years led to similar perverse movements of speculative capital. Another lesson to come from these years was that speculative capital movements are very disruptive of the structure of foreign exchange rates and should be subject to stringent control.

1922-1928

The second period, lasting from 1922 through 1928, was highlighted by attempts to stabilize the currencies of the world. Each nation unilaterally, and with no attempts to consult its neighbors relative to whom it wished to stabilize, began to fix the par value of its currency in terms of gold. The abnormal movements of capital which were taking place, the fact that each nation had since 1913 undergone serious structural change, and the more obvious fact that each country was experiencing widely differing degrees of inflation appeared to be completely disregarded. England in 1925 refixed the value of the pound at 77 shillings 10½ pence to an ounce of gold, which was the gold value of the pound sterling in 1913. France refixed the value of the franc at considerably less than its prewar value in gold. In the light of the prevailing price levels in England and France, the franc was undervalued relative to the £: France, therefore, became a cheaper market in which to buy than England. These and a host of similar unilateral actions with regard to currency par values placed a series of burdens on the already upset structure of international payments. The restoration of currency to artificial par values could be rectified only by changes in all national price levels violent enough to bring the relative par values in line with each other. Such changes were difficult if not impossible to achieve. In England, for example, the forces unleashed to lower the general price level (and with it the level of wages) succeeded only in fomenting the General Strike of 1926. One lesson garnered from the experience in this period is that the par value of currencies should be fixed in accordance with the existing general price levels—and not the other way round, as was attempted in the years 1922-1928. Since par values of currencies are always relative to the par values of other currencies, it can be inferred from the experiences of the middle twenties that nations should meet and fix the respective par values of their currencies on a consultative basis.

Another lesson followed from the above both in logic and in history. If the par values of currencies even after consultative fixing are not in line or if, after they have been in line for a while, changes

take place within an important trading area which affect its purchases from abroad, it is inevitable that forces will be released which will tend to restore equilibrium in the balance of payments. Because of the rigidities of the price and wage levels which exist in the modern economic world, the required decline in the general price level may not be forthcoming. However, if the price level does not fall, a decline in employment will ensue, which has much the same result as a falling price level. National income declines, resulting in reduced national buying power, which leads to a reduction in imports until the imbalance in the nation's international accounts is corrected. From 1925-1929, while the rest of the world was enjoying a period of prosperity, England was suffering continuous unemployment of over a million of her work force. This situation plagued England because the pound was overvalued, thereby upsetting her balance of payments, and her price level did not fall.

THE DEPRESSION YEARS

It appears that a decline in employment in the absence of price flexibility was a contingency which earlier theory had not seriously considered. This oversight, if such it was, is understandable in the light of the assumed perfectly fluid price levels in which unemployment (except temporary) would not exist. In the face of the dynamic rapid growth of world trade prior to 1913, history did not appear to contradict the assumptions. While depressions had occurred, they were soon carried into a new wave of prosperity by the rising secular trend of growth. In 1930, however, a depression struck the world with greater severity than ever before. Starting in the United States, it was associated with a decline in national income which led to an almost automatic curtailment in purchases from abroad. The nations which sold to the United States felt the effects of curtailed export sales through a decline in their national income and reacted by curtailing purchases at home and abroad.

Had these countries not curtailed foreign purchases, they would have experienced an outflow of gold to the United States and a contraction of their own domestic currency circulation. The outflow of gold would have led by the rules of the gold standard game to a rising rate of interest and a declining velocity of money, both of which would have caused a fall in the level of economic activity. In view of wage rigidities, the decline in business activity would be characterized by an increase in unemployment.

The gold standard was a difficult taskmaster which required that

the domestic economy, if necessary, had to suffer as long as external par values remained out of line. During a period of prosperity this was lauded as the great achievement of the gold standard. Whenever depression set in, the requirements of the gold standard amounted to an unfailing means of ensuring that each nation was as depressed as every other. Because the government of each nation felt that it knew better than its neighbors how to achieve and maintain a continuous state of prosperity in the domestic sphere, an almost universal desire to sever the domestic monetary system from the outside world swept the globe. A fourth lesson of the interwar period was that it is desirable to prevent money flows arising from external transactions from having any depressive effect on the volume of domestic circulation or raising the domestic rates of interest.

The first and most obvious answer to the question of how can a nation achieve independence of its domestic circulation is to permit the foreign exchange rate to fluctuate freely. By pursuing such a course of action, the nation can obtain a balance between foreign payments and receipts without upsetting domestic prices, employment, and income. The world had seen earlier that free exchange rates are impossible without a strict control over short-term capital flows; these capital flows were controlled. Despite this precaution, such attempts as were made to have a system of free exchanges always ended in failure. The uncertainty introduced by fluctuating exchange rates, together with the narrow profit margins, made it difficult to conduct international trade. Nor was it feasible to introduce a system of forward buying and selling in order to cover the risks resulting from fluctuating exchange rates as the premiums payable to cover the risks of the insuring agency itself would have to be prohibitively high. Furthermore, the continuous changes in the structure of trade caused by fluctuating exchange rates—changes which could overnight cut off a whole foreign market or create a new one—introduced strains which even the most flexible of production frameworks was unwilling to undergo. From this experience was drawn the fifth lesson, namely that freely fluctuating exchange rates reduce the volume of international trade and should be avoided.

An alternative method of achieving a balanced foreign account without interfering with the domestic economy was the employment of exchange controls. Invariably it was a state of unbalance leading to gold drains which constituted the source of anxiety to the gold-losing nation. Exchange control was presumably the method to prevent this drain. Control could never eradicate the causes of the drain, one of which is usually the overvaluation of the currency. Therefore, it became necessary for any nation using exchange controls

as its sole means of combating the lack of balance to impose extensive controls in order to achieve its objective. The usual outcome of states' employing exchange controls was that they cured the malady (lack of balance in their foreign accounts) by killing world trade. The experience of Germany with exchange controls is a good illustration of the aforementioned generalization. Between 1929 and 1935 Germany's exports (on a quantum basis) fell by some 40 percent, compared with an 18-percent decline for the world.² What remained of her trade was mainly on a barter basis. Her experience was not only uneconomic, but as is inevitable was discriminatory and hence fraught with political dangers. Lesson number six is that exchange control as a long-run weapon tends to reduce world trade. Since it is exercised by the sovereign state and is usually discriminatory, the practice of exchange control enhances the prospects of national misunderstandings and possible world conflict.

The international monetary experiences during the great depression supplied further lessons. The nations of the world soon learned that a dogged adherence to the gold par values of their currencies led either directly or indirectly through an outward drain of gold to reduced employment at home. Attempts were made to correct both the employment conditions and the gold outflows by devaluation of the currencies (that is, abandoning old par values and resetting them at new, lower values relative to gold and to other currencies). This action would work for any one country attempting to expand its exports. With a world depression underway, every nation was suffering from domestic unemployment as well as a decline in the volume of its foreign sales. Every major nation, including the United States, resorted to devaluation as a cure. Since the beneficial effects of devaluation stem from relative changes, the attempts of any nation to devalue are foiled by every other nation's trying to play the same game. This is precisely what happened in the 1930's, when one by one the major nations of the world devalued their currencies—each to an extent decided upon by sovereign and unilateral action.

By 1937 the "devaluation cycle" had run its course and the currencies of the world stood in much the same relation to one another as they had in 1929. No good purpose had been served by the successive shocks which such devaluation had given to the international monetary system. Furthermore, those nations whose currencies were genuinely overvalued and needed to be brought into line with other

² R. Nurkse, *International Currency Experience* (Geneva, League of Nations, 1944), pp. 168-169.

currencies were not able to do so because of the competitive devaluation pursued by other nations. Another lesson to be drawn is that nations should be permitted to alter the values of their currencies, but only after consultation with and the approval of the other nations of the world.

Although devaluation as such had produced no lasting beneficial effects, a by-product of devaluation did help to initiate a marked revival of world trade and employment. Surprisingly enough, most of this revival took place not between nations which devalued and those which had not, but it occurred mainly between the nations which had devalued. The explanation of this, it was soon seen, lay in the fact that devaluation brought about in the first instance an increase in a nation's exports and hence in its income, thereby aiding domestic revival and increasing the money flows within the devaluing country. The initial revival stimulated home market activity and in turn led to an increase in imports. The level of economic activity was increased in those countries from which the imports were obtained. This higher level of income was reflected back on the first country, which experienced a further increase in economic activity due to the growing volume of exports. From this experience one very important lesson can be inferred. The best way each nation has of ensuring a large volume of world trade is to attain a high level of employment and income domestically. In such measure as each nation pursues this policy domestically so does it automatically ensure prosperity for all other countries.

In spite of the most honest attempts of each nation to maintain a high level of income, of employment and thereby a large volume of imports, cyclical aberrations inevitably persist. The most economic policy can guarantee is to minimize the amplitude and duration of the fluctuations. There are two courses of action available to the world during a depression. Either the deficit nations borrow their discrepancy from the remaining nations (and pay for it during the prosperity period) or they can curtail their purchases of finished goods by deliberate controls. The latter course of action would lead through a decline in the volume of production in manufacturing regions to a decline in their purchases of raw materials. Thus, a cumulative downward spiral would be set in motion. It would appear, therefore, that the former alternative would be more desirable. In order to achieve it, however, some system must be devised through which the raw material and agricultural regions could have ready access to borrow such foreign exchange resources as are necessary to meet their current deficits. Furthermore, these funds should be available without the debtor country's being required to raise its

domestic interest rates or contract its domestic currency circulation. The last lesson derived from the currency experience of the interwar period is that some system is required in which nations suffering a temporary lack of foreign exchange—due to the cyclical ebb and flow of relative prices—can receive such funds by the simple expedient of giving other nations an I O U.

The idea of international monetary cooperation is not new. After 1918 a series of efforts were made to achieve a sensible and workable international monetary system. Due either to a lack of knowledge of the real nature of the problem or perhaps to the swift and complicated dynamics of interwar history, these attempts were abortive. Between 1936 and 1939 the Tripartite Agreement among the world's leading trading areas—the United States, Great Britain, and France—offered the hope that a new basis for cooperative action had been found. The arrangements were of limited scope and further developments were prevented by the outbreak of war. During the war, in fact as early as 1942, the Allies began to plan an international monetary system that would boldly incorporate all the lessons learned in earlier years.

From the brief outline of the interwar experience, it appears that the essentials of any workable international monetary system would require:

- A. Stable exchange rates (lesson 5) which are initially fixed by international consultation (lesson 3) and which are alterable, but only with international consent (lesson 7).
- B. A mechanism by which temporary discrepancies in a country's balance of payments can be met by an I O U system (lesson 9) which does not require that country to alter in any way its domestic financial policy (lesson 4).
- C. The aforementioned domestic policy should always be aimed at achieving high and relatively stable levels of employment and income (lesson 8).
- D. Short-term capital movement to be subjected to control (lesson 2) but other forms of exchange control should be abolished (lesson 6).
- E. A system by which the capital needs of wartorn areas or areas which require an extraordinary inflow of capital for reconstruction or development should be met not by speculative flows but by long-term loans through a centrally directed agency or bank (lesson 1).

Item C is primarily a matter of national concern and has been met by a series of employment acts which pledge the governments

of most of the world's leading trading nations to maintain high and stable levels of employment and income. Item D was agreed upon in principle but it was realized that the aftermath of war called for a period of adjustment during which controls would be an essential part of the economies of most nations. We shall confine our discussion in the remaining part of this chapter to the implementation of items A, B, and E.

■ DEVELOPMENTS DURING WORLD WAR II

The conduct of a large-scale war involved violent shifts in production and trade patterns not only in the warring nations but also to a lesser extent in the neutral countries. The virtual isolation of continental Europe from the rest of the world from 1940 to 1944, severed not only the trade channels between most of Europe and Asia, between Asia and South America, between South America and Europe, but also seriously impaired the volume, direction, and the commodity composition of the remaining trade between allied countries and the neutral nations. Acute shortages localized largely within belligerent boundaries were matched by tremendous surpluses elsewhere (for example, Brazilian coffee).

LEND-LEASE AND REVERSE LEND-LEASE

Even before the United States entered the last war, the government became, under the Lend-Lease program, virtually the major exporter after the spring of 1941. The President of the United States was authorized under this program to manufacture in the United States munitions, weapons, vessels, etc., deemed to be of aid to European democracies resisting Germany. These goods and services, which were allocated on the basis of need rather than capacity to pay, were not sold to the recipient countries, though title to these goods was transferred to them. Final settlement was postponed until the war ended. During the period in which Lend-Lease aid was extended, the United States transferred over \$49 billion to friendly countries. Approximately \$8 billion was received from other countries in this same period. Thus, the net amount of Lend-Lease aid extended as grants amounted to over \$40 billion.

PRICE DISPARITIES

The staggering financial burden created by the last war engendered disastrous world-wide inflation. As savings fell far

short of meeting the tremendous sums borrowed by countries at war to pay for unprecedented military expenditures, it was inevitable that bank credit expansion would be one of the devices used to finance the deficits. Wide disparities existed between the fiscal practices, monetary policies, price controls, and direct rationing of goods and services. Furthermore, at the end of the war inflation became far more serious in the face of protracted shortages of consumers' goods and capital goods, and it was magnified further by the pent-up reservoir of purchasing power accumulated during the war. Accordingly, at the end of the war marked divergencies existed in the price levels between countries.

POSTWAR FINANCIAL RELATIONS

The changes in the pattern of production and trade and the glaring cost-price disparities induced by postwar inflationary pressures markedly impaired the financial capacity of practically all nations to establish export markets and to compete for needed imports. One significant factor was a serious, sizable loss of income from "invisible" exports by several European countries, notably the United Kingdom. This condition was one of the contributory factors to the balance of payments disequilibria facing these countries.

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■ POSTWAR RECONSTRUCTION AND DEVELOPMENT PROGRAMS

In the light of the vast disorganization of economic activity during World War II, it became clear that the methods selected to meet the crucial problems of relief and rehabilitation should not (as had been done after the first World War) encumber the world with a complex network of intergovernmental debts, which would retard the achievement of long-run domestic stability. The immediate task of attacking international disequilibrium was one of economic reconstruction in order to provide a firm foundation for the reconstruction of multilateral trade and the restoration of interconvertibility of national currencies. It was also evident that in view of the depletion of the productive capital resources, and the loss of invisible income of the very countries requiring relief and rehabilitation, substantial foreign financial aid had to be provided. We shall, therefore, direct our attention to the various programs and *ad hoc* grants and aids provided, chiefly by the United States; the latter had emerged from the war with a greater productive capacity and a higher standard of living, relative to prewar levels.

THE UNITED NATIONS RELIEF AND REHABILITATION ADMINISTRATION (UNRRA)

The extent of the international disequilibrium challenged the ingenuity of experts charged with the task of postwar reconstruction. The foresight of the forty-four countries allied together in the war against the Axis Powers led to the establishment in November 1943 of the United Nations Relief and Rehabilitation Administration which was intended to provide immediate relief and to rehabilitate the economies of countries destroyed by war. It was agreed to provide its resources through a contribution equal to 1 percent of each member-country's national income. Relief was to be extended solely on the basis of need, "without discrimination because of race, creed, or political belief." Thus, the tasks of alleviating human misery, combating disease, and rehabilitation of war-torn economies of Europe and the Near East were considerably facilitated. Over \$3 billion in aid was distributed by UNRRA; when it was dissolved in 1947, the remaining relief work was delegated to several specialized agencies of the United Nations.

Since the end of the war a vast amount of aid has been granted to foreign countries in an attempt to achieve equilibrium in the international accounts of the nations of the world. The United States has provided the bulk of this aid. Other nations, notably Canada, Sweden, the United Kingdom, Argentina and Switzerland have also provided assistance—albeit in substantially smaller amounts than the United States.

As is evident in Table 58, United States aid to foreign countries since the end of the war has amounted to almost \$34 billion. The major part of this aid has taken the form of outright gifts and grants, and a smaller amount consists of loans to foreign countries. These gifts and loans have been designed (1) to alleviate destitution and suffering, (2) to facilitate reconstruction, and (3) to provide military assistance.

EXPORT-IMPORT BANK

The principal lending agency in international finance of the United States government is the Export-Import Bank of Washington. This bank was created in 1934 to help finance trade with the Soviet Union, which had been recognized recently by the United States. A second bank was created in the same year to extend credits to Cuba and other countries in order to develop foreign markets for American goods. In 1936 both banks were merged into

TABLE 58

INTERNATIONAL GRANTS AND LOANS OF THE UNITED STATES,
JULY 1, 1945-DECEMBER 31, 1951

(In millions of dollars)

	Total	Before E.R.P.	During E.R.P.
Grants			
1. Lend-Lease	\$ 1,945	\$ 1,945	.
2. European Recovery Program (Mutual Security)	12,763		\$ 12,763
3. Civilian Supplies to Occupied Areas	5,439	2,412	3,027
4. UNRRA, post-UNRRA, and interim aid	3,443	3,172	271
5. Aid to Philippines	631	130	500
6. Aid to Greece and Turkey	659	165	495
7. Aid to China	243	120	123
8. Other	632	146	485
Receipts	-1,090	-499	-591
Net Total	\$ 24,665	\$ 7,592	\$ 17,073
Loans			
1. British loan	\$ 3,750	\$ 3,750	...
2. Export-Import Bank loans	2,937	2,087	\$ 849
3. Surplus Property (including merchant ships)	1,338	1,236	102
4. Credit-agreement offsets to grants	1,256	1,253	3
5. European Recovery Program (Mutual Security)	1,277		1,277
6. Other	515	362	153
Collections	-1,766	-523	-1,243
Net Total	\$ 9,306	\$ 8,165	\$ 1,141

SOURCE: U. S. Department of Commerce.

one institution whose operations were confined largely to financing United States exports—particularly agricultural products.

As the international situation became more threatening prior to the outbreak of the war in 1939, the activities of the bank were expanded to include financial assistance to foreign countries. Thus, China was granted loans to purchase goods needed in its war with Japan. Latin American countries received dollar loans to combat the growing danger of German penetration of South American countries.

In 1945 the Export-Import Bank Act amended the charter of this institution, increasing the lending power to \$3.5 billion. Its function was stated to be to promote international trade between the United States and the rest of the world. In 1951 its lending authority was increased to \$4.5 billion.

The bank is not an international relief agency. It is directed to grant only loans and then only after reasonable assurances that these loans will be repaid. Congress directed the bank to use its lending powers to encourage private investment rather than to compete with and discourage private capital investment. Since the European Recovery Program most of the bank's loans have been made in areas outside of Europe.

THE ANGLO-AMERICAN FINANCIAL AGREEMENT

The largest international loan placed by the federal government in the postwar era was the Anglo-American Financial Agreement, ratified by Congress in July 1946. It developed out of the fact that before the end of 1945 heavy British military and financial expenditures in Germany, Greece, and other sectors of the United Kingdom required substantial American aid, particularly in the face of the slow recovery in British exports and a sustained high level of imports, mainly from the dollar area. The loan was designed to facilitate the economic rehabilitation of Great Britain by permitting the country to bring its international accounts much closer to balance.

The provisions of the agreement include: (1) a loan by the United States government of \$3,750 million to the British government to be released within 4 years, (2) the cancellation of \$25 billion of British Lend-Lease obligations, (3) the consolidation in the amount of \$650 million of British Lend-Lease obligations covering those goods in transit and delivered after V-J day and for the purchase of surplus war property of the United States as well as installations in the United Kingdom. This total loan of \$4,400 million is to be repaid with interest at 2 percent, the first payment on both interest and installment on the principal having been due in 1952. The agreement provides further that interest for any year will be fully waived whenever British exports do not reach a level estimated at about 60 percent in excess of prewar volume.

The United Kingdom agreed to remove exchange controls immediately after July 1946 covering: (1) payments or transfers on current transactions with the United States; (2) the use of sterling balances (credited to residents of the United States) arising out of cur-

rent transactions; (3) all sterling received within a year (that is, by July 15, 1947) from current transactions of all sterling area countries would, without discrimination, be made freely convertible. Similarly, the United Kingdom also agreed that on July 15, 1947, it would abandon exchange controls for current transactions with countries not members of the sterling area, unless otherwise agreed to, and (4) the United Kingdom agreed to negotiate with countries owning sterling balances blocked in Great Britain in order that part of these balances would be released immediately while another part should be released in installments over several years effective in 1951, and another portion of these balances would be canceled by mutual consent.

The attempt to fulfill the convertibility provisions of the agreement proved disappointing. In July and August 1947 when the convertibility provisions were put into effect, Britain found it necessary to draw down \$1.3 billion of the loan. Late in August of that year free convertibility was suspended. The effect of this episode was that Britain exhausted its loan in March 1948, although it had been anticipated that drawings would have been spread out for 3 or 4 years. The virtual depletion of British foreign exchange reserves suggests that the size of the loan was inadequate and that, perhaps, the credit should have been a grant rather than a loan. Furthermore, it may well be that conditions were too premature to justify the resumption of free convertibility. While the proceeds of the loan undoubtedly facilitated the recovery of Britain's productivity, it became necessary to include that country as one of the principal beneficiaries of the European Recovery Program.

POINT FOUR PROGRAM

Long before President Truman enunciated what is now known as the "Point Four" Program of technical assistance, the rudiments of cooperative action among inter-American republics started in 1942. In his inaugural address on January 20, 1949, President Truman recommended the extension of grants by the United States for technical assistance in order to make the "benefits of our scientific advances and industrial progress available for the improvement and growth of underdeveloped areas." Subsequently little was done to implement the objectives of this suggestion. It was not until June 1950 that Congress appropriated \$35 million to initiate the work under this program. The United Nations in its desire to cooperate with the Point Four Program established a Technical Assistance Board to unify the various activities already mentioned

and to provide a pool of experts to serve on special missions as they are required. About one half of the first year's appropriation was contributed to the United Nations Technical Assistance Program. Since then, the activities under the Point Four Program have slowly, but gradually, been increasing. It is estimated that about \$41 million was spent in 1951. As of the end of 1951 the United States Government was conducting over 200 projects in more than thirty-five countries, under the Point Four Program.

THE EUROPEAN RECOVERY PROGRAM

Despite the substantial foreign loans and grants extended to Europe, and the material aid rendered by UNRRA for immediate relief and rehabilitation, the general economic outlook deteriorated in Europe early in 1947. Many observers ascribed this situation largely to the piecemeal, emergency, and stopgap nature of the various programs which up to that time were provided. However, other factors existed which created serious economic difficulties. First, the heavy drains on Europe's foreign exchange reserves and gold, and the increasing liquidation of her foreign investments and assets persisted in a vain attempt to meet an equally persistent balance of payments deficit.^a Second, price inflation abroad, by making Europe's imports relatively more expensive, reduced her imports, inducing thereby a proportionate reduction in the export of goods which required imported raw materials. Third, an abnormally poor harvest in 1947 caused either increased imports of food or a further reduction in the already low food rations imposed by the abnormally low level of available food supplies.

The various *ad hoc* arrangements for grants and aids already referred to proved later to be either inadequate or unsuitable or, at best, lacked the essential coordination to insure the success of the program. Imbued with a deep concern over the continued political and economic instability in Europe, and its implications to the world

^a *Economic Survey of Europe in 1948* (Washington, D. C., 1948), p. 269. The data given by Table 74 show that 77 percent of the 1947 balance of payments deficit of \$7.6 billion was liquidated by the transfer of gold and the sale of long-term and short-term assets, while the remaining 23 percent was paid largely out of United States grants and gifts.

The disequilibria in Europe's early postwar balances of payments were the type which were intractable to either the gold standard type of adjustment, or to that provided by exchange-rate adjustment. For at that time there was no international gold standard and no international monetary standard. Furthermore, Europe's import needs were so crucial that it is extremely doubtful whether anything but a prohibitive price, resulting from exchange depreciation, would have significantly decreased their demand for imports.

at large, then Secretary of State Marshall announced that henceforth unilateral aid by the government of the United States should give way to a new program characterized by greater coordination of efforts on the part of European countries, as a whole, and on the part of the United States. Marshall's suggestion was immediately translated into action when the representatives of sixteen countries met in Paris to consider a comprehensive plan for concerted European recovery.⁴ A Committee of European Economic Cooperation (CEEC) was organized and formulated a report depicting the aggregate material needs of the sixteen CEEC countries (including Western Germany) for the 4-year period, 1948-1951. After conferring with the United States State Department regarding the over-all report, it was concluded that the European Recovery Program would require for the period 1948-1951 foreign aid of some \$22 billion, most of which was expected to be financed by material and financial aid from the United States Government.⁵ The commodities intended to be purchased by the participating countries included mainly coal, food, fertilizer, petroleum products, iron and steel products, timber, and agricultural machinery. Convinced of the futility of piecemeal and emergency foreign aid, Congress appropriated \$4 billion to finance the first year's operation of the Economic Cooperation Administration which was established in 1948 to administer the European Recovery Program.

Organization The actual operation of the ERP involves the annual preparation of a joint economic program by the Organization for European Economic Cooperation, which replaced the CEEC in April 1948. This program is prepared out of individual country estimates submitted to the OEEC. Then the joint program is reviewed by the Office of the Special Representative of the Economic Cooperation Administration in Paris from which office the program is forwarded to the ECA for final review. The European nations which were qualified to receive assistance were required to enter into specific agreements with ECA whereby they agreed to undertake measures to stabilize their currencies, increase production, and cooperate with other participating countries in the interchange of goods.

Operations The ECA has discretionary power to allocate aid between loans and grants. Most of its aid has been supplied in the

⁴ The 16 countries were: Austria, Belgium, Denmark, France, Greece, Iceland, Italy, Luxembourg, the Netherlands, Norway, Portugal, Sweden, Switzerland, the United Kingdom, Turkey and the Western Zone of Germany.

⁵ Committee of European Economic Cooperation, Vol. 1, *General Report*, Vol. 2, *Technical Reports* (reprinted as Dept. of State Publication 2830, European Series 28, Washington, 1947), Vol. 1, p. 69.

form of grants. The prevailing practice was a recognition of the fact that the nations receiving aid would be better able to become self-financing if a network of debts requiring repayment in the future was avoided.

Counterpart Funds Recovery in the ERP countries was to be promoted not only by the free dollar aid received from the United States but also by the internal use of the domestic currency "counterpart" of such aid. When ECA ships goods to a country on a grant basis the country sells these goods internally in terms of its own currency. The ECA agreement requires that the country deposit such funds in a restricted account with its central bank. This money can be withdrawn only with ECA's consent; the latter would approve any use of these funds designed to promote recovery and economic stability within that country.

Intra-European Payments Agreement One of the objectives of the European Recovery Program was the establishment of multi-lateral trade among ERP countries. To further this aim the ECA made a portion of its dollar grants to a nation conditional upon its granting drawing rights to other European countries which showed a deficit in trade with the particular country. However, the drawing rights extended to other countries could only be used by the particular country receiving this right. In July 1950 the Intra-European Payment Scheme permitted a nation to transfer up to 25 percent of its drawing rights to any other ERP countries. This scheme represents a considerable improvement over the former bilateral payments scheme, for under it unused credits or drawing rights could be transferred to any ERP country to settle debts or to make purchases. This flexible balancing of international payments is a definite advance over the rigid limitations imposed by bilateral balancing between a pair of countries.

By the end of 1950 the character of ECA aid was changing from assistance designed to promote recovery to aid designed to provide military assistance while laying the groundwork for further improvements in living standards. By law, the European Recovery Program ended on June 30, 1952; it expired administratively on December 31, 1951, when the ECA was dissolved. It was supplanted by the Mutual Security Program administered by the Mutual Security Agency. While loans and grants are extended by this Agency to improve the living standards of foreign nations, its principal objectives are (1) to help build defenses against aggressors and (2) to help the European countries become self-supporting in their military defense efforts.

■ INTERNATIONAL MONETARY COOPERATION

BANK FOR INTERNATIONAL SETTLEMENTS

In 1929 the Young Plan had not only revised reparations due by Germany to the victors of World War I but had also provided for a Bank for International Settlements. The Bank was designed both to receive and distribute annuities received from Germany and to further cooperation by central banks. Located in Basle, it was owned by central banking institutions of leading nations.

THE INTERNATIONAL MONETARY FUND

It should be pointed out that the International Monetary Fund (hereafter described as the Fund) and the International Bank for Reconstruction and Development (hereafter called the Bank) though independent organizations are cooperative ventures whose objectives are interdependent. These organizations were established with the explicit objective of solving the monetary problems of postwar reconstruction. In effect, the Bretton Woods twins correspond to the dual nature of postwar monetary problems: (1) a means of securing short-term capital to finance temporary disequilibria in the balance of payments of member countries and (2) a means of providing long-term capital to meet the needs of war-ravaged countries for reconstruction and the economic development of underdeveloped countries. Problems involving the treatment of trade restrictions as import quotas, tariffs, custom duties, etc., though correlative to international monetary problems come within the purview of another international organization, the International Trade Organization.

Organization and Structure The main office of the Fund is located in Washington, D. C. Though set up as an autonomous organization, it is affiliated with the United Nations. The membership constituted the forty-four signatory national governments whose representatives attended the Bretton Woods Conference. Each country appoints one member and one alternate to the Board of Governors; from these, twelve members are chosen as executive directors. Five of these directors are "appointed" by the five largest subscribers (each being entitled to one director), the other seven being "elected" by the rest of the subscribers. The Board of Governors, which meets only once a year, retains the more important powers (admission of new members, quota revision, requiring a mem-

ber to withdraw), and delegates its residual authority to the executive directors.

Each member is entitled to 250 votes, plus an additional vote for each \$100,000 of its original subscription quota. The United States, therefore gets 250 votes plus 27,500 more (since its quota is \$2.75 billion) or 27,750. Voting power is reduced (or increased) by borrowing (or by lending) at the rate of one vote for each \$400,000 borrowed (or loaned).

The original capital of the Fund was set at \$8.8 billion, which is derived from "quotas" agreed to be subscribed by each member. The assets of the Fund may be increased by net earnings from its operations. The established quotas were based upon several factors, the most important of which are the country's resources and the size and the movement of its foreign exchange transactions. Accordingly, that of the United States was the largest one, \$2.75 billion. Quotas were required to be paid to the Fund in the following manner: (1) in gold in an amount equal to 25 percent of the quota, or 10 percent of the net official holdings of gold and United States dollars, whichever is smaller, and (2) the balance payable in the country's own currency or with gold. Quotas may be increased (or decreased) only upon the approval of four fifths of the Board of Governors and the consent of the member whose quota is to be adjusted. Through such adjustments members can increase both their voting power and their credit rating with the Fund. The quotas of forty-eight member nations on September 30, 1949, amounted to \$8,046,500,000, as is shown in Table 59.

To prevent the depletion of the gold value of the Fund's assets, Article IV, Section 8 (b) of the agreement, provides that: "Whenever (i) the par value of a member's currency is reduced, or (ii) the foreign exchange value of a member's currency has, in the opinion of the Fund, depreciated to a significant extent within that member's territories, the member shall pay to the Fund within a reasonable time an amount of its own currency equal to the reduction in the gold value of a member's currency held by the Fund." Section 8 (C) states: "Whenever the par value of a member's currency is increased, the Fund shall return to such member within a reasonable time an amount in its currency equal to the increase in the gold value of its currency held by the Fund."

Objectives Broadly conceived, the Fund aims to contribute to the early stabilization of international exchange relations and to encourage the development and maintenance of conditions which will conduce to the removal, and discourage the resumption of exchange

TABLE 59

QUOTAS AND SUBSCRIPTIONS IN THE FUND AND BANK,
SEPTEMBER 30, 1949

(In millions of dollars)

	Quota in the Fund	Subscription in the Bank
United States	\$2,750.0	\$3,175.0
United Kingdom	1,300.0	1,300.0
China	550.0	600.0
France	525.0	525.0
India	400.0	400.0
Canada	300.0	325.0
Netherlands	275.0	275.0
Belgium	225.0	225.0
Australia	200.0	200.0
Italy	180.0	180.0
Brazil	150.0	105.0
Czechoslovakia	125.0	125.0
Poland ^a	125.0	125.0
Thirty-five other members	941.5	788.5
Totals	\$8,046.5	\$8,348.5

SOURCE: International Monetary Fund, *Annual Reports*; International Bank for Reconstruction and Development, *Annual Reports*.

^a Poland withdrew March 14, 1950.

restrictions. Specifically, the Fund hopes to achieve the following objectives as provided under Article I of the Bretton Woods Agreements:

1. To promote international monetary cooperation through a permanent institution which provides the machinery for consultation and collaboration on international monetary problems.
2. To facilitate the expansion and balanced growth of international trade, and to contribute thereby to the promotion and maintenance of high levels of employment and real income and to the development of the productive resources of all members as primary objectives of economic policy.
3. To promote exchange stability, to maintain orderly exchange arrangements among members, and to avoid competitive exchange depreciation.
4. To assist in the establishment of a multilateral system of payments in respect of current transactions between members and in the elimi-

nation of foreign exchange restrictions which hamper the growth of world trade.

5. To give confidence to members by making the Fund's resources available to them under adequate safeguards, thus providing them with opportunity to correct maladjustments in their balance of payments without resorting to measures destructive of national or international prosperity.
6. In accordance with the above, to shorten the duration and lessen the degree of disequilibrium in the international balances of payments of members.

Initial Determination of Par Values When the Fund and the member countries faced the problem of setting the initial exchange rates in the latter part of 1946, two courses of action were available.^a First, the Fund could have adopted as the initial rates a pattern of exchange rates which through searching analysis was believed to achieve a long-run equilibrium in the foreign payments and receipts of member countries. The alternative was to adopt the existing pattern of rates at that time, leaving the needed adjustments to a later period when it was believed the exchange-rate situation would have approximated a relatively more "normal" condition. The latter was in fact adopted by the Fund. Hence, on December 18, 1946, the Fund and the original members agreed upon the initial par values of the respective members' currencies, in terms of gold or United States dollars, based upon the exchange rates then prevailing. The fund commenced operations on March 1, 1947.

Once the par value of a currency is established, a member may not purchase gold at a price above or below the par value established. Furthermore, a member is obligated to maintain its maximum and minimum rates for exchange transactions, that is, actual rates must not differ from parity rates by not more than 1 percent. To illustrate, take the case of Great Britain with an established par value of \$2.80. For Great Britain the permissible exchange-rate fluctuations must not exceed an upper rate of \$2.828 or fall below a rate of \$2.772. Should the actual rates move beyond these limits, the Fund requires Great Britain to invoke its stabilization fund in order to bring the actual rates within the tolerable limits.

The Fund provides for an orderly procedure governing adjustments of a member country's exchange rates. After consultation with the Fund, a member country may without the Fund's con-

^a For an excellent exposition of the Fund's position with respect to the choice of the second alternative, see L. A. Metzler's article, "Exchange Rates and the International Monetary Fund," in *International Monetary Policies, Postwar Economic Studies*, No. 7 (Washington, Board of Governors, Federal Reserve System, 1947), pp. 30-42.

sent, increase or decrease the par value of its currency by not more than 10 percent of the initially agreed par value. Any proposed change greater than 10 percent must be either approved or rejected by the Fund within 72 hours, after the request has been made by a member. If, without the Fund's concurrence, a change in par values in excess of 10 percent is effected by a member, the Fund is empowered to withhold access to the Fund's resources and may also force the member country to withdraw its membership from the Fund.

Transactions with the Fund Since the Fund's assets consist of gold and the currencies of its members, deposited in their respective central banks, the sale of dollars by the Fund to the Bank of England merely reduces the Fund's dollar balances at the Federal Reserve Bank of New York while its sterling balances at the Bank of England are correspondingly augmented. Thus, except where the purchase is made with gold, transactions by the Fund involve simply a reduction in the Fund's holdings of the currency purchased, offset by a corresponding increase in its holdings of the buying country's currency. The total assets of the Fund remain the same although a change in their composition takes place.

To conserve the liquidity of the Fund's resources so as to enable it to meet all purchases of currency by any member for any purposes consistent with the Bretton Woods Agreements, there are provisions for limits on borrowing and repayments of loans. First, a member may purchase any desired currency in an amount not exceeding 25 percent of its quota during any one year period, provided that the total purchases must not cause the Fund's holdings of that currency to exceed 200 percent of that quota.⁷ The Fund is authorized to waive these (and other) restrictions for "members with a record of avoiding large or continued use of the Fund's resources." Where such restrictions are waived, the Fund may require the hypothecation of gold, silver, or other acceptable assets to safeguard the Fund's interests. Second, in order to discourage any indiscriminate resort to the Fund's resources as a source of foreign exchange, interest, service and handling charges are imposed uniformly on all users of these privileges. The rates charged a member buying the

⁷ Assume that the Fund holds, for a country with a quota of \$500 million, \$900 million of its currency. Ordinarily, this country would be entitled to purchase up to \$125 million for any 1-year period, except that the Fund already holds the amount of \$900 million of this country's currency. Hence, the country's maximum possible purchases of any foreign currency (held by the Fund) would be \$100 million, since the acquisition of this amount would increase the Fund's holdings to \$1 billion, or 200 percent of the country's quota.

currency of another member vary progressively with the *amount borrowed* and with *the time the loan runs*.

It should be observed that the purchase of a foreign currency from the Fund's holdings by a member actually amounts to a loan to the purchaser by the country whose currency was sold by the Fund. As we saw in Chapter 21, in the normal course of international financial relations, the supply of foreign exchange available to the borrower would be limited by that generated by its total exports of goods and services. Any discrepancy between a country's supply of foreign exchange and its demand must be met by either a depletion of the country's domestic or foreign liquid assets or by short-term or long-term credits provided from some source.

Although the Fund commenced its operations on March 1, 1947, it was not until May 8, 1947, that it concluded its first currency transaction by the sale of \$25 million to France in exchange for francs. From the date of its opening to April 30, 1951, it consummated on behalf of its forty-nine members transactions aggregating the equivalent of \$811.4 in United States currency. Of this amount, \$805.2 million was sold for currency and \$6.2 million for gold.

Scarce Currencies In the event that a general demand by several members for any particular currency would threaten to exhaust the Fund's holdings of that currency, it may take several remedial steps. First, the Fund may issue a report, prepared in collaboration with a representative of the country whose currency is approaching scarcity, delineating the cause or causes of the scarcity and suggesting corrective measures. Second, the Fund may borrow the scarce currency from the member in question or, with the consent of the member, the Fund may borrow the scarce currency from other sources. Third, the Fund may purchase the scarce currency of the member with gold. Fourth, if convinced of its inability to supply the currency in question, in the face of protracted, general demand by members, the Fund "shall formally declare such currency scarce and shall thenceforth apportion its existing and accruing supply of the scarce currency with due regard to the relative needs of members, the general international economic situation, and any other pertinent consideration."

It must be emphasized, however, that the exhaustion of holdings of a particular currency in the Fund, on account of very substantial purchases by one or two countries, does not per se amount to a prima-facie "scarcity" of that currency. On the other hand, the evidence may indicate the existence of a fundamental disequilibrium on the part of the country (or countries) whose abnormal purchases

of the currency in question threatened to make it scarce. The formal declaration by the Fund that a currency is scarce permits member countries to impose only such exchange controls which will enable them to balance their demand for and their individual supply of the currency. All such controls must be removed immediately after the scarce currency has been declared by the Fund no longer scarce.

Fundamental Disequilibrium The preceding discussion of the Fund's operations involves transactions needed to offset temporary balance of payments disequilibria. When, however, a country's balance of payments deficit persists and gives indication that it is no longer temporary, the Fund permits the member to make the essential adjustments in its exchange rate. Just what constitutes a "fundamental disequilibrium," however, remains conjectural, since the Fund has chosen not to define the term.

Exchange Restrictions Reference has already been made to the fact that one of the ultimate objectives of the Fund is the eventual removal of all exchange restrictions. While removal of exchange control constitutes a prerequisite to the establishment of multilateral trade and interconvertibility of currencies, the Fund is equally cognizant of the difficulties which must be overcome before member countries will have gained sufficient economic strength to enable them, without restrictions in trade and exchange, to trade freely and to convert their positive trade balances for the settlement of their deficits elsewhere. To facilitate the gradual removal of these restrictions, the Fund is required to report on the existing restrictions, at the end of the third year and at the end of the fifth year after its operations began. Those members retaining exchange restrictions on current accounts at the end of the fifth year must discuss the possibility of eventual removal of such restrictions with the Fund.

THE INTERNATIONAL BANK FOR RECONSTRUCTION AND DEVELOPMENT

Structure and Organization The Fund was designed to enable nations to ride out temporary disequilibria in their balance of payments, by borrowing the foreign exchange they required. The Bank, which was also established under the Bretton Woods Agreements, was designed to minimize balance of payments disequilibria by providing nations with a source of long-term capital. The management and organization of the Bank are substantially the same as those of the Fund, except that the Bank has a president, rather than a managing director, as its chief executive. Its membership

consisted of the same forty-four nations which also initially founded the Fund.

Objectives The Bank was designed to complement the Fund's objectives, which center around the stabilization of exchange relations through the provision of short-term funds, by the provision at reasonable rates of long-term credit for the reconstruction of war-devastated areas and for the economic development of member countries and of underdeveloped economies.

The Bank is not intended to replace the ordinary private channels of international investment, which have traditionally provided the flow of international long-term capital. Rather, it is designed to supplement their operations and thus lend long-term capital only when eligible borrowers have neither access to other sources of capital, nor can secure the desired loan on reasonable terms without the Bank's intercession. The Bank may participate in extending loans, and it may extend guaranties on specific loans made by other private international lenders, if in the opinion of the Bank's officials, the proposed investment projects are considered safe, and may be expected to increase the world's productive resources. The specific purposes of the Bank are:

1. To assist in the reconstruction and development of territories of members by facilitating the investment of capital for productive purposes, including the restoration of economies destroyed or disrupted by war, the reconversion of productive facilities to peacetime needs and the encouragement of the development of productive facilities and resources in less developed countries.
2. To promote private foreign investment by means of guarantees or participations in loans and other investments made by private investors; and when private capital is not available on reasonable terms, to supplement private investment by providing, on suitable conditions, financing for productive purposes out of its own capital or funds raised by it.
3. To promote the long-range balanced growth of international trade and the maintenance of equilibrium in balances of payments by encouraging international investment for the development of the productive resources of members, thereby assisting in raising productivity, the standard of living, and conditions of labor in their territories.
4. To arrange the loans made or guaranteed by it in relation to international loans through other channels so that the more useful and urgent projects, large and small alike, will be dealt with first.
5. To conduct its operations with due regard to the effect of international investment on business conditions in the territories of mem-

bers and, in the immediate postwar years, to assist in bringing about a smooth transition from a wartime to a peacetime economy.

Capitalization The agreement provides for an authorized capital stock of \$10 billion divided into 100,000 shares of a par value of \$100,000 a share. As of September 30, 1949, members had subscribed to 83,485 shares (see Table 59). The original capital may be increased if three fourths of the total voting power approves. The stock subscribed was made payable at par, and subsequent stock issues will also be sold at par, unless otherwise provided by a majority vote of the officials of the Bank. Two percent of each original member's subscription was payable in gold or in United States dollars within 2 months from the Bank's initial opening date; another 8 percent of said subscription was callable, and made payable in the currency of the subscriber. Another 10 percent also payable in the subscriber's currency is subject to call when the Bank's loan operations demand it. Thus, 20 percent of the subscribed capital constitutes the Bank's "loanable fund," while the remaining 80 percent is callable only to meet the Bank's maturing obligations to its creditors or its obligations arising out of its loan guarantees.

To maintain the original dollar value of shares held by each member, the Bank requires offsetting payments by each member whenever the par value of its currency falls; conversely, the Bank makes payments to the member if the par value of the member's currency appreciates.

Accretions to the "loanable fund" can readily be made by the Bank through the sale of its own obligations in the money market of a member, subject to that member's prior consent. Thus, on July 17, 1947, the Bank announced the sale in the United States through 1,600 dealers of \$100 million of 10-year 2¼-percent bonds, due July 15, 1957, and \$150 million of 25-year 3-percent bonds, due July 15, 1972. This original flotation was followed by subsequent issues in the United States and abroad. In addition, the Bank has sold some of the securities it received from borrowers to private investors—with and without its unconditional guarantee of the issue.

Loans and Guarantees Eligible borrowers consist of member countries, their political subdivisions, and corporate enterprises domiciled and operating within their territories. The Bank's loan activities are: (1) to make direct loans out of its own loanable funds plus its borrowed funds, (2) to participate with other lenders in granting loans, and (3) to guarantee private loans.

The Bank's participations and guarantees are extended only whenever eligible borrowers cannot obtain funds on reasonable terms

without the Bank's intercession. When borrowers are nonmembers, the Bank's participation in the loan or its guarantee of a loan extended by private channels, must be secured against loss of principal, interest, and commission. The eligible guarantors may consist of the government of the member country, its central bank, or some institution within the member's territory, acceptable to the Bank.

The Bank's aggregate outstanding loans and participations are limited to its *paid-in* capital, surplus, and reserves, and borrowed funds. Total outstanding loans, participations, and guarantees are limited to the sum of its unimpaired *subscribed* capital, surplus and reserves. The Bank is fully empowered to set interest rates, maturities, and amortization provisions on its loans; in addition, it may charge a commission of 1 percent to 1½ percent on outstanding balances of its loans granted out of borrowed funds and upon outstanding balances of guaranteed loans. This commission rate may be increased or decreased after 10 years, at its discretion.

In guaranteeing loans provided by private investors, the Bank must secure the approval of the member in whose money market the loan was made; in addition, it must secure the approval of the member in whose currency the loan was made available to the borrower. The significance of this point can be explained in the following illustration. Assume that India obtains a loan guaranteed by the Bank from private Canadian investors for the construction of a steel plant. India may wish to import heavy machinery from the United States and coal from Britain. In this case, payments to the United States and Britain would be made against credits established by the Bank in India, in dollars and in sterling, respectively.

Transactions On May 9, 1947, the Bank made its first important loan of \$250 million to the Credit National, a quasi-public agency of the French government, for the reconstruction and economic development of France. Loans were subsequently made to the Netherlands on August 7, 1947, in the amount of \$195 million for reconstruction; to Denmark on August 22, 1947, in the amount of \$40 million; and to Luxembourg on August 28, 1947, for \$12 million. On March 28, 1948, before the end of the Bank's first fiscal year, a loan consisting of \$13.5 million 20-year 4½-percent bonds and \$2.5 million 6½-year 3¾-percent bonds was made to Chile for the development of power generation and transmission. Partly due to the absence of adequate resources within the countries undergoing reconstruction, the Bank's total loans during its first year of actual lending operations amounting to \$497 million represented more than one half of its lending capacity. The implications of this high

ratio of loans-to-lending capacity demonstrated the crucial economic and financial problems which presaged the establishment of the European Recovery Program. The rapid utilization of the Bank's lending capacity made it clearly apparent that, if the progress of reconstruction was to remain unimpeded, the total resources of the Bank must be immediately supplemented by other sources of financial assistance.

The grants and loans provided under the ERP resulted in a change in the volume and direction of most of the Bank's subsequent loans, away from Europe to Latin America and Asia. The wisdom of this redirection in the Bank's loans is evident from even a cursory analysis of the nature of the financial aid received by the ERP countries. To begin with their individual and aggregate financial needs would have exceeded the lending capacity of the Bank. Again their needs for relief and rehabilitation reflected an emergency condition rather than one of a long-range character, and could be more appropriately met by the ERP than by the Bank. After the expiration of the ERP and its successor(s), the Western European countries will, doubtlessly, become increasingly dependent upon the Bank's facilities to finance their long-term investment projects.

After 1948 the major portion of the Bank's loans was devoted to financing economic development of underdeveloped countries in Latin America and Asia. In an effort to determine the prospects and practicability of projects proposed in loan applications submitted by member countries, the Bank sent comprehensive survey missions to make recommendations in connection with the applicants' economic development. Such missions were dispatched to Egypt, India, Iran, Iraq, at least eleven Latin American countries, Lebanon, and the Philippine Republic. Based on the survey of the over-all economic conditions of the member countries which requested aid, these missions have made useful suggestions conducive to the development of more effective monetary and fiscal policies in these underdeveloped countries.

Since its establishment, the Bank by the end of 1952 had extended forty-eight loans amounting to the equivalent of \$1,114 million, including \$17 million in cancellations by borrowers. In the fiscal year ended June 30, 1948, the total loans outstanding (of \$497 million) made to four countries in Europe and one in Latin America, represented 45 percent of the Bank's total loan commitments since its existence; in 1949 it made total loans to five countries of approximately \$142 million or 12 percent; in 1950 loans to ten countries equivalent to \$178 million or 16 percent; and in 1951, it made

twenty-one loans to eleven countries of approximately \$297.1 million of 27 percent.^a

Although most of the Bank's loans in earlier years were largely confined to loans in United States dollars, the expansion of production and income in many Western European countries points to the possibility that ultimately these countries may generate sufficient savings to finance part of the long-term capital requirements for the economic development of underdeveloped countries. However, the trend of increasing armament expenditures in Western Europe has certainly deferred this day. The possibility that the Bank's loan operations in nondollar currencies will become more important in the future will depend upon how fast European countries will be able to release their 18-percent funds^b and will depend upon the Bank's borrowing operations in nondollar currencies. Operations in 1951 provided besides dollar exchange, Canadian dollars, and other European currencies. Convertibility of part of the European 18-percent funds, made possible through the framework of the European Payments Union, has enabled the Bank to make loans in nondollar currencies and to finance intra-European purchases by member countries. The first loan to be paid entirely in currencies other than United States dollars was made to Iceland on June 20, 1951. It will be paid in sterling, French francs, Danish kroner, and Norwegian kroner. To make it possible, the countries whose currencies are involved have agreed to release part of their 18-percent subscriptions to the Bank's capital.

An analysis of the aggregate loans made to the end of the fiscal year 1951, classified by purpose, is shown in Table 60. Western European countries received 45 percent of the total loans made. The remaining 55 percent has been granted for the economic development of underdeveloped countries.

These economic development loans were allocated to the various projects in the following order: 45 percent were devoted to power generation and transmission; 20 percent were for the rehabilitation and construction of railroads, shipping facilities and equipment, roads, and ports; 15 percent were granted for the increasing mechanization of agriculture, for irrigation, flood control, and timber production; 11 percent were loaned for industrial development including mining; the remaining loans were granted for expanding communication facilities and miscellaneous purposes.

Unlike a commercial bank, the Bank's lending capacity is de-

^a Sixth Annual Report of the International Bank for Reconstruction and Development, pp. 17-40.

^b Representing the subscriptions to Bank capital which are payable in local currency.

TABLE 60
INTERNATIONAL BANK LOANS CLASSIFIED BY PURPOSE AS OF
JUNE 30, 1951
(In millions of dollars)

Loans for postwar reconstruction		\$ 497
Other loans		600
Electric Power	\$271	
Transportation	119	
Communication	30	
Agriculture and Forestry	92	
Industry	67	
Development Banks	21	
Total		<u>\$1,097</u>

SOURCE: *Sixth Annual Report, op. cit.*, p. 14.

pendent not only on the amount of its available loanable funds but also on the composition of this fund, as between dollars (U. S.) for which there is the greatest demand by borrowers and the other currencies. As of June 30, 1951, less than 5 percent of the total loanable funds were available for new loan commitments by the Bank. However, it should be noted that the United States is the only member country which has fully paid its 18-percent fund to the Bank. As of the end of June 1951, only two fifths of the aggregate 18-percent portion of the subscriptions has been paid, leaving a callable balance equal to \$903,250,000. Too much importance cannot be attached to this amount as the basis for further loan commitments, so long as the greater part of the (demand for) loans is desired in United States dollars.

It does not appear that for the immediate future the Bank will be able to obtain nondollar funds in an amount large enough to add greatly to its lending capacity. Improvements in world economic conditions in the future may enable the Bank to render a more important role in furthering international investment than it has been able to achieve to date.

QUESTIONS AND PROBLEMS

1. a. Contrast the operations of the pre-1914 gold standard with that in effect in the interwar period.
- b. How do you account for the downfall of the gold standard?
- c. How does the International Monetary Fund, in your opinion,

9. a. At the time of the Bretton Woods discussion critics proposed a "key currency" approach to the problem of stabilization, maintaining that all that was needed was to stabilize exchange rates between the principal currencies. Give reasons for and against the proposal.
- b. Some have proposed that the Bank and the Fund be consolidated. Do you agree? Give reasons for and against the proposal.
10. a. To what extent do you regard the International Monetary Fund as essentially a central bank for Treasuries and central banks?
- b. Would your answer differ if the participants had adopted Keynes' proposal that the Fund keep its accounts and conduct its operations in a new international unit, the *bancor*, instead of in the national currencies at their several gold values?

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PART VI

MONETARY
POLICY

CHAPTER 24

Monetary and Fiscal Policy

THE chief purpose of theoretical analysis such as was outlined in Part IV (Chapters 16-20) is to provide a framework which can be applied in matters pertaining to public policy. There is virtual agreement among economists that the goal of public policy is economic stability. However, the concept of stability has undergone change over time.

■ ECONOMIC STABILITY

GOALS

There is a strong tradition in economics in favor of defining stability in terms of the behavior of the general price level. The severity of the depression following 1929 served to focus attention on the need to avoid unemployment. Therefore, it is understandable that prior to World War II the problem of economic stability was conceived mainly in terms of maintaining high levels of employment. The employment point of view is typified by the Employment Act of 1946 in which Congress set up the ultimate objective of economic stability in the following terms:

. . . it is the continuing policy and responsibility of the Federal Government to use all practicable means consistent with its needs and obligations and other essential considerations of national policy, with the assistance and cooperation of industry, agriculture, labor, and State and

local governments, to coordinate and utilize all its plans, functions, and resources for the purpose of creating and maintaining, in a manner calculated to foster and promote free competitive enterprise and the general welfare, conditions under which there will be afforded useful employment opportunities, including self-employment, for those able, willing, and seeking to work, and to promote maximum employment, production, and purchasing power.

Since the end of World War II the most pressing problem facing the nations of the world has been the threat of continuing inflation. As a consequence of this threat to economic stability, the goal of economic stabilization has been recast to include achievement of both full employment and price stability.¹

Neither objective of economic stability is easy to define. For our purposes we shall utilize the definition of full employment of the American Economic Association Committee on Economic Stability which reads as follows: "*Full employment* means that qualified people who seek jobs at prevailing wage rates can find them in productive activities without considerable delay. It means full-time jobs for people who want to work full time. . . . It does not mean that unemployment is ever zero."²

The goal of price stability is somewhat easier to define. On this subject the American Economic Association Committee said: "Price-level stability means the absence of any marked trend or sharp short-term movements in the general level of prices."³ Thus, both short-term and secular movements in the price level either upward or downward are to be avoided. Individual prices, however, must be free to move in response to underlying economic conditions as these individual price movements are the very essence of the operations of the market price mechanism as an allocator of resources among competing ends.

The real risk entailed in setting up these twin goals of economic stability is that these objectives may clash. The elements of rigidity in our economic system could conceivably make the attainment of full employment dependent upon secular inflation in the economy. What should be done in the event these goals conflict is still being debated.⁴

In addition to full employment and price stability, maintenance

¹ See Patman Report, p. 40; also Committee of the American Economic Association, "The Problem of Economic Instability," *American Economic Review*, September, 1950.

² Committee of the American Economic Association, *op. cit.*, p. 506.

³ *Ibid.*

⁴ See L. W. Mints, *Monetary Policy for a Competitive Society* (New York, 1950), especially Chaps. 1, 2, and 6 and E. S. Shaw, *Money, Income and Monetary Policy* (Chicago, 1950), pp. 398-406.

of economic stability requires consideration of other goals. The paramount concern in our type of society is the maintenance of the essential liberties that we associate with the word democracy. The essence of freedom is the exercise of free choice by individuals. In the economic sphere this means a large measure of freedom in the disposition of one's income, in the choice of one's occupation, and in the manner in which one invests or uses his property.

During the depressed 1930's the problem of achieving and maintaining full employment appeared to many students to present a serious difficulty. These students believed that because of secular changes a tendency existed for equilibrium to be reached in the economy at less than full employment. They contended that the American economy had become mature and subject to secular stagnation. Hansen and others pointed to factors such as a slackening rate of population growth and shift of invention from capital using (creating new industries) to capital saving (performing the same operations more efficiently and hence more cheaply). A high level of employment could be achieved only through a correspondingly high level of investment to provide an outlet for the savings that accompany a high level of income. These critics believed that the necessary new investment opportunities for sustaining full employment were no longer present in our economy. At most there might be occasional temporary spurts. With the advent of World War II and the dynamic postwar economy, students have shifted their attention from the secular to the cyclical phases.

DIRECT AND INDIRECT CONTROLS

In the light of maintaining freedom, the preponderance of professional opinion lies in the direction of utilizing monetary and fiscal measures to achieve economic stability under normal circumstances. These measures are indirect and impersonal types of regulation. They can be distinguished from direct controls such as government price controls, wage controls, rationing, and allocations. In times of emergency (mainly strengthening a nation's defense against a war or the actual conduct of war) it is probably correct to say that most economists would defend utilization of direct controls. At best, the defense of direct controls in emergencies is a reluctant willingness to use these measures.⁶

⁶ See National Planning Association, *Monetary Policy to Combat Inflation*, Special Report No. 31 (January 21, 1952), pp. 3-4. "We all agree, however, that price and wage controls are, at best, a necessary evil and that a program to prevent inflation, whatever direct controls it may contain, will succeed only if it includes fiscal and monetary measures adequate to eliminate excess monetary demand."

The advantage of monetary and fiscal measures over direct controls as a means of seeking economic stability was stated clearly by Mr. J. Cameron Thomson of the Committee for Economic Development in his testimony before the so-called Douglas subcommittee.⁶

I want to draw a sharp distinction between fiscal, monetary, and debt-management policies on the one hand and direct controls on the other hand. By direct controls, I mean such measures as Government price controls, wage controls, rationing, allocations, and controls over the direction of investment. Failure to distinguish between these two kinds of measures is responsible for much confusion in public discussion and could lead to serious error in public policy. Two kinds of confusion are common. One is to reject the attempt to achieve greater stability by fiscal, monetary, and debt-management policies by putting these policies in the same class with direct controls over the details of private economic activity. The other is to accept in all manner of direct controls by putting them in the same class with indirect financial measures for stability.

Fiscal, monetary, and debt policies are appropriate means for attacking the problem of instability in a free society. The problem of instability is essentially a problem of broad forces affecting the over-all magnitudes of the economy. The problem arises when millions of workers are simultaneously unemployed, or when there is a general, although probably uneven, rise of most prices. The advantage of fiscal, monetary, and debt policies is that they allow the Government to influence the over-all forces—especially the level of aggregate demand—that determine the stability of the economy without necessarily involving the Government in detailed control of the particulars of the economy. These over-all measures will, of course, affect different individuals and businesses differently. But the differences are determined by the market process, not by Government decisions. The Government does not have to make decisions that are with rare exceptions better left to the market—the price of shoes relative to the price of automobiles, whether the ABC company or the XYZ company should prosper, what kind of a job John Jones or Robert Smith should have.

Direct controls do involve Government decisions about the particular interrelationships of the parts of the economy. One virtue claimed for them by their advocates is that they are "selective." But adding together a very large number of selective controls is surely a clumsy, expensive, inefficient, and politically dangerous way to get the over-all effect needed to deal with the stability problem. While the market process is not perfect, any general substitution of Government decisions for it would result in serious loss of efficiency, progress and stability.

But more than efficiency, progress, and stability are at stake. Freedom is also at stake. Any widespread system of direct controls would neces-

⁶ Douglas Hearings, *op. cit.*, p. 10.

sarily involve widespread power of Government to affect the economic fortunes of particular individuals, businesses, industries, and regions "selectively"; that is, discriminatingly. This power would have to be exercised by the Executive subject to only the most general statutory limitations. It would be the power to reward or punish, to coerce, by administrative action. The existence of such a power would ominously threaten the survival of our free society, for so long as the free society might endure.

We hear the concepts of "freedom" and "statism" used so much and so loosely that we become callous and impatient with them. But, on the specific problem of this subcommittee, I am convinced that the importance of fiscal, monetary, and debt policy will not be sufficiently appreciated until we learn to make the distinction between power to coerce individuals and power to affect the general behavior of the economy. A precise line cannot be drawn between appropriate and inappropriate powers; yet, we must recognize that there is a direction in which we should not move except in cases of clearest necessity and even then only with utmost caution.

The remainder of this chapter, and indeed the major portion of this book, is concerned with the monetary and fiscal aspects of our economy. It is imperative to remember, however, that while fiscal and monetary policy are essential ingredients of stabilization policy, they do not make unnecessary the pursuit of appropriate economic policies in other areas. In other words, there is no assurance that economic stability will be achieved through monetary and fiscal controls alone. A few examples will illustrate this point.

Labor-management policies have an important bearing on the successful achievement of economic stability. An actual work stoppage in an important industry—such as steel, coal mining, or transportation—can throw thousands of men out of work. The labor struggle cannot be eliminated by a monetary fiscal control program alone. The negotiation of a wage contract can have profound repercussions on economic stability. Wage contracts affect not only the distribution of income between contracting parties, but also the amount to be distributed and ultimately the flow of expenditures through the entire economy. If organized groups exert enough pressure to force money incomes up more rapidly than increases in productivity, the monetary fiscal control authorities may have to choose between expanding the stock of money to support higher costs and rising prices or refusing to increase the stock of money and permitting unemployment to rise. In the face of these alternatives no matter how well conceived and executed the monetary and fiscal policies may be, stability may not be maintained.

The price policies of business firms also have an important bearing on economic stability. If these firms maintain prices in the face of declining demand, the consequences may be a fall in output and employment. Apart from their employment repercussions, rigid or inflexible prices may prevent the necessary adjustments in the patterns of production without which a dynamic economy cannot continue to provide rising levels of real income for its people.

■ THE NATION'S ECONOMIC BUDGET

An important tool of analysis which has been used in recent years in connection with stabilization policy is the "Nation's Economic Budget." An illustration of such a budget for a recent year is shown in Table 61.

Such a budget is required by the Employment Act of 1946 as a part of the President's annual Economic Report. It should be apparent that this "budget" is a rearrangement of the GNP accounts; it is a record of what has happened in the past and is not a forecast of what may happen in the future. The components of the "budget" bring out the results of the spending and saving decisions of each of the four sectors which purchase national output.

The Nation's Economic Budget is a useful tool for analyzing what has happened in the past. There can be no question as to balance in this budget. As we saw earlier, these accounts must balance. The basic question is whether balance will be achieved with full employment or unemployment. This budget is not a policy prescription, although it may be helpful in relating past experience as a guide to recommendations for policy to be used in the future.

The Nation's Economic Budget for 1951 as it appeared in the President's Economic Report to Congress provides some interesting insights into the operations of the economy in that year. Personal savings almost doubled between the first and second half of the year. Therefore, higher levels of investment were called for during the second half of the year. But the behavior of the business sector of the economy was exactly the reverse. Business which invested at an annual rate of \$35 billion more than it saved in the first half of the year invested at an annual rate of roughly \$22 billion more than it saved in the second half of the year.

This, however, does not tell the complete story. If we consider the consumer, business, and international sectors of the economy together, we can see that there was a net inflationary gap in the private sector of the economy during the first half year. During that period total private investment (at an annual rate of \$35.2 billion

minus \$1.7 billion) over and above gross business savings exceeded personal savings by about \$20 billion at annual rates. The government account served to reduce the inflationary pressure in that period. In the latter half of 1951 there was neither an inflationary nor deflationary gap in the private sector of the economy. Government deficits (excess of payments over receipts) served to supply an inflationary impulse in the economy.

■ FISCAL POLICY

The level of employment and income varies with changes in the level of aggregate demand. We have seen that aggregate demand consists of consumption expenditures; private, domestic, and foreign investment; and government expenditures. Consumption is the largest segment of total spending and also the most stable component; private investment is the most volatile element of total spending; government expenditures represent the sums which can be most readily manipulated through government action.

If there is unemployment because of too little spending in the economy, appropriate policy would be to increase total spending; if there is too much spending with a resultant inflation, measures to reduce total spending should be undertaken. Since maintenance of a high level of employment and income and a relatively stable level of prices is not the specific concern of any private agency, it must be the responsibility of the government.

In broad terms, the federal government is responsible for keeping the economy as a whole on the sea of full employment and stable prices and off the rocks of inflation on the one hand and deflation on the other. Inflation with its injustices and disorganizing effects upon the economy and deflation with its accompanying curse of unemployment, poverty, and waste both represent dangers against which an enterprise economy provides no direct safeguards. Since individualistic elements within the economy cannot be expected to turn the tides of general inflationary or deflationary forces once these begin, the responsibility of protecting the economy against these forces has been lodged in the hands of the federal government and its chief administrative agencies in the economic sphere—the Federal Reserve System and the Treasury.

Inflation, as we have analyzed it, occurs when, during a period of full or near full employment of resources, aggregate demand becomes greater than aggregate supply. Deflation on the other hand is an outcome of the opposite situation, i.e., when aggregate demand

TABLE 61

THE NATION'S ECONOMIC BUDGET, 1951

(In billions of dollars; seasonally adjusted annual rates)

	1951, first half			1951, second half ^a		
	Re- ceipts	Ex- pendi- tures	Excess of re- ceipts (+) or ex- pendi- tures (-)	Re- ceipts	Ex- pendi- tures	Excess of re- ceipts (+) or ex- pendi- tures (-)
<i>Economic group</i>						
<i>Consumers</i>						
1. Disposable income arising from current production	202.8	.....	.....	209.6	.....	.....
2. Government transfers and net interest payments	16.4	.....	.....	16.6	.....	.....
3. Disposable personal income	219.3	.....	.....	226.4	.....	.....
4. Personal consumption expenditures	.....	205.0	.....	.....	203.8	.....
5. Personal saving (+)	.....	.....	+14.3	.....	.....	+22.6
<i>Business</i>						
6. Retained receipts from current production	27.6	.....	.....	33.2	.....	.....
7. Gross private domestic investment	.....	62.8	.....	.....	54.8	.....
8. Excess of investment (-)	.....	.....	-35.2	.....	.....	-21.6

International

9. Cash loans abroad	.....	.....	.....	.....	.....
10. Net foreign investment	.....	-1.4	.....	.....	1.6
11. Excess of receipts (+) or investment (-)	.....	.....	+1.7	.....	-1.4

Government (Federal, State, and Local)

12. Tax payments or liabilities	90.5	.....	.....	87.4	.....
13. Adjustment to cash basis	-12.2	.....	.....	-7.2	.....
14. Cash receipts from the public	78.3	.....	.....	80.2	.....
15. Purchases of goods and services	.....	56.9	.....	.....	70.1
16. Government transfer payments	.....	14.7	.....	.....	15.2
17. Cash payments to the public	.....	71.6	.....	.....	85.3
18. Excess of receipts (+) or payments (-)	.....	.....	+6.7	.....	-5.1

Adjustments

19. For receipts relating to gross national product ^b	+2.4	.....	+2.4	.....	.....
20. Other adjustments ^c	+10.1	.....	+10.1	+5.5	+5.5
21. Gross national product	323.4	323.4	.....	330.3	330.3

SOURCE: *Economic Report of the President* (January 1952), p. 157.

^a Estimates based on incomplete data; fourth quarter by Council of Economic Advisers.

^b These adjustments bring the estimates on the receipts side into agreement with those on the expenditures side of the accounts. They include the statistical discrepancy less "subsidies less current surplus of government enterprises." The statistical discrepancy represents the difference between the two independent estimates of gross national product: income received from current output and expenditures for this output. "Subsidies less current surplus of government enterprises" are included in national income, but not in the gross national product.

^c "Other adjustments" are net and are the amount necessary for balancing the excess of receipts (+) with the excess of expenditures (-). They are required because some items of government cash payments are either not recorded in private receipts at all (such as purchases of existing assets), or they are recorded in a different time period from that in which payment is made. Government cash receipts also include some items not deducted from private incomes, or deducted in a different period.

is not high enough to maintain the continuance of that scale of production and output. If we are to achieve economic stability, we must stabilize the components of aggregate demand; if this cannot be done, it then becomes necessary to offset the fluctuations in some components by counter movements in the others. In order to combat inflationary forces the control authorities have to exert pressures in the opposite direction—namely, those pressures which act to curb or to reduce aggregate demand. Per contra, in order to combat deflationary forces, the control authorities have somehow to induce an increase in aggregate demand.

The term functional finance⁷ is used to describe the fund-raising and fund-spending techniques which may be used by the government with the specific objectives of regulating the flow of spending for current output. Thus, if aggregate spending is inadequate to achieve full employment, the government can attempt to increase spending indirectly by inducing people to spend more. Transfer payments—unemployment benefits, relief payments, benefits to veterans and the aged, subsidies to certain groups, etc.—can be increased. In this manner the disposable income of the recipients will be increased, thereby leading to increased consumption. Spending may be increased indirectly also if the government reduces *tax rates*, thereby increasing the disposable income of individuals and business firms. Finally, the government can increase total spending directly by increasing its own purchases of goods and services.

If the government desires to reduce the level of aggregate spending, it can reverse the aforementioned steps. Total spending can be reduced directly by the government by curtailing its own purchases of goods and services. The government can reduce total spending indirectly by reducing transfer payments or increasing tax rates. Either course of action will reduce disposable income and through it spending for consumption by households and spending for capital formation by business firms.

CONSUMPTION

The amount of consumers' expenditures is the result of the level of disposable income and the propensity to consume (ratio of consumers' expenditures to disposable income). Since cyclical changes in consumption are due mainly to changes in the level of disposable income, the principal channel for altering the amount

⁷ A. P. Lerner, *The Economics of Control* (New York, 1944), Chap. 24, takes the extreme position that all government finance must be regarded as functional, having the specific and exclusive objective of stabilizing the economy and ignoring the raising of funds to meet governmental needs, which is usually regarded as uppermost.

of consumption is to change the level of disposable income. Any measures which will change the proportion of the given income that people spend will also be valuable although, as we shall see shortly, there is little that can be done directly by fiscal policy along these lines.

As was pointed out in Chapter 15, there are important automatic stabilizers currently built into our fiscal system. Contracyclical transfer payments and a progressive tax structure tend to increase disposable income in a depression and reduce disposable income if employment and income expands. These results come about with *no* change in tax rates.

If the government went further and reduced rates in a depression and raised them in a boom, disposable income would be moderated even more over the course of the business cycle. There are several disadvantages of such a proposal. In the first place, it requires time to get a revised tax law through Congress. In the second place, the timing of the revision of the tax law is likely to be poor so that changes in disposable income are apt to come at the wrong time. In the third place, constant revision of the tax structure is apt to be unsettling to the business community and, therefore, may have adverse effects upon the businessman's expectations.

Thus far we have dealt with stabilizing consumption by maintaining the community's disposable income. The government can attempt to influence consumption by seeking to alter the fraction of disposable income people are willing to spend. Within the framework of a free-enterprise economy there is little that fiscal policy can accomplish directly in order to change the *proportion* of their incomes which people will attempt to spend out of a given level and distribution of income. During periods of national emergency the control authorities may attempt to call upon the people to voluntarily change their consumption patterns—but the success of such action cannot be depended upon. Or, government may force a lower level of consumption through rationing and allocation controls. These direct controls are, however, not feasible in a free-enterprise economy except during times of defense and war. Indeed there is a growing feeling that these measures merely postpone the problem of excess demand, hence lay the economy open to postwar instability. A third possibility is to redistribute incomes from groups with a high propensity to consume to groups with a low propensity to consume (and vice versa in a depression).

This would bring about a change in consumer demand as a whole, but this type of action entails such a radical departure from the basic ideology of the enterprise system that it can be disregarded as an

unfeasible solution. It is true that every time a government raises money by taxation and expends this money, it does in a sense bring about some redistribution of incomes—but in this case redistribution is a subsidiary and not the primary aim of such taxation. Moreover, as was pointed out above, Congressional action on tax rates is apt to be slow.

PRIVATE INVESTMENT

In order to change the level of private investment the control authorities must bring about either a change in the marginal efficiency of capital or a change in the rate of interest. Since we are presently concerned with fiscal policy, we shall defer treatment of the rate of interest to the following section which deals with monetary policy.

Like the propensity to consume, the marginal efficiency of capital at any given time is a social fact about which the government may not be able to do very much within the framework of a free-enterprise economy. In a situation of national emergency existing in a defense economy or at a time of war, direct controls over investment through material allocations may be utilized. While recourse to this action may be defensible in an emergency such a measure is not a feasible solution for contracyclical policy in a free-enterprise society.

The principal avenue through which fiscal policy can change investment demand is through alterations in the tax structure. Corporate savings are a principal source of funds to business to finance capital formation. By altering tax rates corporate savings after taxes may be increased or decreased with favorable or adverse effects on the level of capital formation. Various plans have been put forward to encourage investment in a depression. Among them are tax advantages offered to firms engaging in capital formation in depressions. Another measure suggested is that business incomes should be averaged for a period of years; thus losses could be deducted from profits of later years. This measure should serve to stabilize investment to some extent by reducing the tax load over a period of years. Finally, if fiscal policy were effective in stabilizing economic activity, anticipations would be more favorable, thereby serving to stabilize investment itself.

Consequently, changes in taxes by increasing or decreasing the tax liability of those sectors which are responsible for the bulk of investment demand can change the environment in which business deci-

sions are made and by altering the anticipated return on new ventures can bring about a change in the level of investment.

FOREIGN INVESTMENT

Foreign investment does provide an avenue through which aggregate demand for current output can be influenced, but the experience of the 1930's demonstrated that the solution provided for unemployment by raising the level of foreign investment is at best a short-run one. Since foreign investment is equal to the excess of exports over imports, any factors which reduce the latter and increase the former will have an expansionary effect. Tariffs, quotas, and devaluation of currencies are the three important weapons which have been employed in the past. However, since foreign nations are also in a position to raise tariffs, impose quotas, and devalue their currencies, these devices are futile as long-run solutions and serve only to increase international ill will and to upset the normal channels of international trade.⁸

GOVERNMENT PURCHASES OF GOODS AND SERVICES

If the government wishes to stabilize economic activity by stabilizing total demand, should it concentrate on the revenue side or on the expenditures side? In a period of inflation should the government raise tax rates or reduce expenditures and conversely in a depression? In the 1930's attention was devoted to variations in government expenditures, particularly on public works as a way of stimulating economic activity. In recent years more attention has been devoted to variations in tax rates to increase or decrease spending. One virtue of public works programs is that they raise personal incomes and consumption and set the multiplier process in operation. In this respect, it has been argued that increased expenditures either through public works or transfer payments have a more stimulating effect than a deficit of equal size resulting from reduced taxes.

On the other hand, there are some economists who object to the use of public works programs as stabilization devices. Thus, these economists argue that the volume of government expenditures on goods and services—exclusive of transfer payments—should be based on the community's desire, need, and willingness to pay for public services. If expansion or contraction of aggregate demand is desired, the government should reduce taxes and permit people to spend their funds as they wish. In addition to the alleged advantage that

⁸ Chapter 23.

this procedure is consistent with a free-enterprise economy, proponents of the tax-reduction program argue that this method is far more flexible and more immediate in its impact upon total spending. Public works programs take time to initiate, and forward planning is not always as easy to achieve as some economists would have us believe.⁹

It is probably correct to report that the majority of economists would favor the maximum utilization of automatic flexibility in the nation's budget. In the event of a serious recession, however, the consensus of professional opinion would support both tax relief and other incentive systems as well as use of public works programs to restore spending.¹⁰

Since Congress is free to adjust government receipts and expenditures so as to produce any desired level of government budget surplus or deficit, the fiscal policy of the government provides a definite avenue of control over the level of aggregate demand. Like monetary policy and in contrast with direct avenues of control such as rationing and allocations, fiscal policy is compatible with the ideology of a free-enterprise economy. But, unlike monetary policy, fiscal policy exerts a direct pressure on the level of aggregate demand, and as an expansionary device it does not suffer from the limitations to which monetary policy may be subject. In other words, an expansionary fiscal policy is not likely to be frustrated by the elasticity of the liquidity schedule or the inelasticity of the schedule of investment.

However, it does suffer from a potential disadvantage as an expansionary force which does not arise in connection with monetary policy. Government deficits mean increases in government debt, for deficit expenditures are financed out of funds borrowed by the government. An increase in debt usually implies an increase in the future level of tax rates. Moreover, if the deficit results from an increase in government expenditures, use of the fiscal weapon results in an increase in governmental spheres of business activity, some of which may infringe on the private sector of the economy.¹¹

These two factors may act to discourage the level of private investment and thereby intensify one of the factors (a low level of private investment) which is contributing to the shortage of aggregate demand. On this point, however, it has been argued that the

⁹ Committee for Economic Development, *Monetary and Fiscal Policy for Greater Economic Stability* (New York, 1948); L. W. Mints, *Monetary Policy for a Competitive Society* (New York, 1950), Chaps. 8, 9; M. Friedman, "A Monetary and Fiscal Framework for Economic Stability," *American Economic Review* (June 1948).

¹⁰ "Federal Expenditure and Revenue Policy for Economic Stability," reprinted in Chapter XI of *Douglas Hearings*, *op. cit.*

¹¹ For example, the building of electric plants.

stimulation of aggregate demand brought about by the increase in government deficits will spark an expansionary movement which in turn will stimulate rather than dampen the anticipation of businessmen and thereby raise the marginal efficiency of capital. A priori reasoning alone is not likely to be able to provide an answer to this particular possible conflict of opinion on the secondary effects of an expansionary fiscal policy. Fiscal policy is a new weapon and further experience alone will settle the theoretical dispute.

■ MONETARY POLICY

Attainment of economic stability requires maintenance of aggregate spending at levels which will ensure relatively full employment at relatively stable prices. Decisions by households and business firms to alter their expenditures are responsible for expansion or contraction in national income. The decisions about expenditures are influenced not only by the flow of incomes but also by monetary factors including (1) cash holdings, (2) liquid asset holdings, and (3) the cost and availability of borrowed funds. When firms and households regard the amount of cash and liquid assets they hold as large relative to their total wealth, they will try to convert part of these holdings into other assets. Thus, they will spend a larger fraction of their current income, thereby increasing aggregate demand. Moreover, when it is easy and cheap to borrow, households and business firms which seek to acquire real assets will find it easier to realize such aims, thus bringing about an increase in total spending and income. Conversely, when individuals and firms hold amounts of cash and liquid assets relative to their total wealth that they consider inadequate, they reduce their spending in order to build up their holdings of such assets; when cost of funds increases and their availability is reduced, borrowing is reduced. The result of both sets of decisions is to reduce total spending—hence, national income. Thus, monetary policy by changing the stock of money—and through it the amount, availability, and cost of borrowed funds—provides one avenue through which alterations in the level of spending may be affected.

MONETARY AND FISCAL POLICY

Monetary policies affect income and expenditures—particularly in the private sector of the economy—by influencing the stock of money and through it the cost and availability of borrowed funds. Fiscal policies affect the level of income and spending through

their effects upon the amount, character, and timing of government expenditures and the amount, type, and timing of taxes collected. The receipts and expenditures sides of the budget, in turn, affect the expenditures of households and businesses. The financing of a budget deficit, the disposition of a budget surplus, and the management of the public debt are aspects of fiscal policy which are inextricably bound up with monetary policy.

Monetary policy and fiscal policy (including debt management) are complementary tools available to the government in its attempt to maintain economic stability. In a period of inflationary pressure excess demand can be reduced by budgetary surpluses; debt management can be directed at reducing the liquidity of the economy; monetary action may be utilized to reduce the availability and to increase the cost of borrowed funds. These devices can be used in varying combinations to reduce the pressure of excess demand. For example, the larger the surplus the less is the need for restrictive monetary policy, or the more stringent the monetary policy the smaller will be the budgetary surplus that is required. In periods of unemployment and deflation aggregate demand may be stimulated by budget deficits, debt management directed at enhancing the community's liquidity, and an easy-money policy. It should be readily apparent from the preceding discussion that the larger the deficit the less need there is for an easy-money policy, and the more expansive is the monetary policy the smaller the budgetary deficit required to stimulate economic activity.

The importance of coordination of monetary and fiscal measures to achieve the goal of economic stability cannot be stressed enough. Thus, in an inflationary period it is unfortunate if the restrictive effects of a budgetary surplus are thwarted by an expansive monetary policy. In large measure these contradictory policies were pursued in the United States during most of the postwar period. Conversely, it is conceivable that there may be no monetary policy sufficiently easy to prevent deflation resulting from a sufficiently large budget surplus.

One of the limitations on the effectiveness of fiscal policy as a stabilization tool at the present time is its inflexibility. Except to the limited extent that it operates automatically in a countercyclical direction fiscal policy cannot be adjusted quickly to short-term variations in economic conditions. A long period of time is typically required to formulate, enact and put into operation changes in tax rates. Similarly it is a time-consuming process to formulate an expenditures program and have it enacted by Congress; moreover,

additional time is required to start and stop or to slow up or speed up an expenditure program.

An advantage of monetary policy is its flexibility within limits set by statute. Monetary policy can be altered sharply and quickly if maintenance of stability requires such action. In this manner, monetary policy can be used to bridge the time gap required to enact changes in fiscal policy. Both appropriate monetary and fiscal policy can contribute to economic stability. The exact combination of policies which will provide optimal results at any particular time will depend upon circumstances prevailing at that time and the practical feasibility of action in one or the other of the fields.

ROLE OF MONETARY POLICY

There have been pronounced shifts in the role assigned to monetary policy as a stabilization tool by economists even over as short a period as the past quarter of a century. Twenty-five years ago monetary policy was given first place in proposals to stabilize economic activity. Belief in the efficacy of monetary policy as a stabilization tool stemmed from the effective control by the central bank over the rate of interest. Thus, increases in the rate of interest would discourage investment and choke off inflationary forces while decreases in the rate of interest would stimulate investment; hence, aggregate demand would be increased and would counter deflationary forces.

Experience in the depression following 1929 shattered the belief in the efficacy of central bank interest-rate policy as a prime tool for maintaining economic stability. Despite the easy-money policies pursued by the United States and many Western European countries, unemployment persisted and the level of investment remained low as compared with the 1920's. Interest-rate policy, however, was not considered ineffective in all stages of the business cycle. Despite a widespread feeling that reductions in interest rates would not stimulate investment in a depression, many economists did maintain that monetary policy was effective in limiting a rise in economic activity. Since monetary policy was not considered as effective in fighting a depression as it was in combating inflation, it lost out as a prime weapon for maintaining economic stability.

In seeking an explanation of the inadequacy of monetary policy to stimulate a recovery from the depression, the dominant viewpoint of economists was that the rate of new investment was inelastic with respect to the level of interest rates. As we saw in Chapter 20, an inelastic investment schedule means that investment does not rise

with a fall in interest rates. The interest-inelasticity of investment was explained on two counts: (1) interest represents a minor element of total costs in short-term investments, and (2) in making long-term investments uncertainty as to the future economic outlook and other variables are far more important than the influence of interest as an expense. The relative unimportance of the level of interest rates on businessmen's investment decisions appeared to be substantiated by empirical studies of investment decisions that were carried on during the 1930's.

The persistence of widespread unemployment after 1933 despite the historically unprecedented low level of interest rates was undoubtedly an important factor in the shift of opinions of economists to the use of fiscal policy as the leading tool for achieving economic stability. The shift away from monetary policy was so drastic that many economists were prepared to abandon completely monetary policy as a tool for controlling economic activity. Fiscal policy reigned supreme!

After World War II, the easy-money policies which were pursued in connection with management of the public debt and the presence of full employment were important factors in the severity of price inflation prevalent in many countries. Not many countries relied on restrictive monetary policy to control inflation in the immediate postwar years. Central banks did not exercise their powers of monetary control and interest rates were generally maintained at low levels. There were some exceptions—particularly Belgium, Italy, and, to a lesser extent, France. The success of these nations in controlling inflation no doubt played a part in the recent moves by other European countries to make interest rates more flexible and to restrict the volume of bank lending. The renewal of inflationary pressures in the United States after the Korean crisis led this country as well as many others to employ restrictive monetary policies in combating the price rises. Monetary policy was newly discovered. The rediscovery of monetary policy is illustrated in the following quotation from the Douglas Report.¹²

... we believe that the advantages of avoiding inflation are so great and that a restrictive monetary policy can contribute so much to this end that the freedom of the Federal Reserve to restrict credit and raise interest rates for general stabilization purposes should be restored. . . .

The revival of interest in monetary policy has been characterized by focusing attention not only on the effect of changes in interest rates on the borrowers' demand for funds but also on the influence

¹² Douglas Report, *op. cit.*, p. 2.

of interest-rate changes upon the extent to which lenders make funds available. The orientation of interest in monetary policy is expressed by one author as follows.¹³

In essence, it is not necessarily interest rates as a cost to the borrower, nor as an inducement to the saver, but rather interest rates as a reflection of underlying changes in credit availability, that have an important . . . impact upon the generation of business cycles.

While a revival of attention to monetary policy was heightened by the postwar inflation, it is undoubtedly still true that the majority of professional economic opinion would accord first place in stabilization policy to fiscal measures. Monetary policy, however, would be assigned an important, albeit not *the* leading, role. In the remainder of this section we shall review the *modus operandi* of monetary policy in stabilizing economic activity.¹⁴

HOW MONETARY POLICY OPERATES

By altering the reserve position of the banks the Federal Reserve authorities bring about an easing or tightening of credit conditions. Variations in credit ease or tightness have their initial impact upon the amount of spending which can be done with borrowed funds. In addition, variations in credit conditions also affect spending where no borrowing is entailed. The latter effects are achieved in a number of ways. (1) Expectations of the business community may be altered in a more favorable (credit ease) manner or they may be dampened (credit restriction). (2) A rise in the rate of interest resulting from restrictive monetary policy will reduce the capitalized value of income-producing property. Consumers may respond to this rise in interest rates by saving more because the return on savings is more attractive, or they may save more because they are uncertain about future economic conditions and therefore plan to build up their liquid assets for emergencies. A fall in the capitalized value of income-producing property may reduce the expenditures of business because investments once considered profitable no longer appear profitable; alternatively, businesses may curtail current spending in order to add to their liquidity in the face of uncertainty as to the economic outlook. Businesses may also curtail their current spending programs in order to accumulate enough

¹³ Essay by R. V. Roosa, "Interest Rates and the Central Bank," in *Money, Trade, and Economic Growth: In Honor of John H. Williams* (New York, 1951), p. 276.

¹⁴ The discussion which follows is based in large part on the reply of the Chairman of the Board of Governors of the Federal Reserve System to the questionnaire sent out by the Patman subcommittee. See Patman Hearings, *op. cit.*, pp. 368-383.

funds to assure themselves of sufficient funds to enable them to fulfill their future business plans.

It should be clear that an easing of credit conditions and the attendant fall in interest rates would increase the capitalized value of income-producing property. All the above measures which served to reduce current spending would be reversed. Consumers may be encouraged to reduce their saving out of current income and business firms to increase their spending.

The effect of an easing or tightening of credit conditions on the demand for credit is dependent on the existence of a fringe of borrowing or potential borrowing. Credit restraint is effective on the demand side through its influence in deterring borrowers from using borrowed funds for purposes which have marginal profitability or by deterring borrowers from using as much credit as might have appeared profitable in the absence of changes in credit conditions.

In a period of rapidly expanding economic activity when total demand for credit is great, there is a substantial amount of fringe borrowing. In a depression if monetary ease is to be effective in stimulating borrowing, there must be a fringe of potential borrowing which would occur if credit were made easier (cheaper and more readily available). Under most conditions such a fringe does exist and pursuit of monetary ease will stimulate borrowing in amounts and for purposes that were not regarded as profitable previously. Whether the quantity of potential fringe borrowing is sufficient to stimulate recovery is not known.

Because the evidence of the availability of fringe borrowing on the upswing is more generally accepted by economists there appears to be a more widespread belief in the efficacy of monetary control directed against inflation than against deflation. Hence, the greater weight of economist opinion is that monetary policy is not symmetrical—in other words, monetary policy can help prevent inflation but is relatively impotent in reversing a deflation.

In recent years there is a growing belief that we have not had an adequate test of the efficacy of monetary policy in reversing a deflation in the United States. If credit easing is to stimulate borrowing in a depression, there must be a fringe of potential borrowing that would take place if credit is made cheaper and more readily available. If in the preceding boom monetary policy has not dampened the demand for funds, investment will have been permitted to proceed so rapidly that many credit uses that would ordinarily have been stimulated by an easing of credit may have been satiated in the boom. Thus, the inadequate monetary controls in the boom lead to so sharp a decline in economic activity that monetary ease

in the depression cannot overcome the adverse expectations of the business community. If this reasoning is correct, it would tend to support the argument that monetary policy may be effective in reversing a depression if appropriate monetary action is also taken earlier to dampen the preceding boom.

Alterations in monetary policy will be reflected in variations in rates of interest. Changes in monetary policy may be more effective not by virtue of the interest-rate change but because of the resulting effects upon lending standards. Thus, restrictive monetary policy may lead to more rigorous standards used by lenders in judging the credit worthiness of borrowers and for determining the amount of credit lines that will be extended. A restrictive monetary policy will lead to some increase in interest rates. Thus, banks faced with no excess reserves will be reluctant to sell their government securities at prices that yield capital losses. Moreover, declining bond prices will add to the uncertainties facing the banks and may cause them to reduce their loans in order to build up their liquidity in the face of this uncertainty as to future prices of government securities. Credit tightening implies there are less funds available for lending; moreover, the climate of opinion generated by credit tightness adds to pessimistic expectations of bankers. In the face of both developments bankers will tend to be more careful in screening loan applications and will ordinarily lend less than would be the case in the absence of credit tightness.

Institutions operating in the long-term credit market, such as life insurance companies and mutual savings banks, are affected in much the same way as commercial banks by restrictive monetary policy and its concomitant rise in interest rates. A rise in interest rates causes bond prices to fall, and these suppliers of loanable funds will not be willing to sell their bond portfolios at capital losses in order to finance businesses. Moreover, their estimate of the future outlook may become more pessimistic, thus encouraging these long-term credit lenders to build up their liquidity. The previous discussion has related to the effects of restrictive monetary policy. An expansive monetary policy would have approximately the reverse effects.

Restrictive monetary policy serves to restrain borrowing by virtue of the difficulty of obtaining loans, the higher interest costs of loans where available and in part by creating adverse expectations and uncertainty in the minds of business which leads them to restrict their borrowing programs. In certain fields of long-term investment, such as housing and public utilities, interest costs are particularly significant and a relatively small rise in interest rates may have a significant effect in decreasing or postponing the demand for funds

to finance investment plans. Even in other fields where the rate of interest is a small element of total costs, fringe borrowing may be cut off by a rise in interest rates, while other borrowers may simply reduce the size of their planned investment in inventory and plant and equipment.

Apart from the influence of a rise in interest rates as a current cost, restrictive monetary policy may exercise an important influence upon investment decisions by the effect which an increase in the rate of interest has in reducing the money value of existing income-producing assets. Assuming actual or anticipated earnings remain the same, a rise in interest rates reduces the value of existing assets. The decline in the market value of existing assets together with any adverse expectations as to future business activity which arise from restrictive monetary policy tends to encourage utilization of existing assets rather than production of new ones. Thus, the demand for existing factors of production tends to be curtailed. Moreover, the rise in interest rates leads to declines in bond yields, thereby reducing the liquidity of holders of such securities. An attempt to maintain their liquidity or increase it in the face of uncertainty results in an increase in saving, hence a decline in the demand for current output. A program of monetary ease would reverse the events just outlined.

The impact of monetary policy in encouraging or discouraging aggregate spending and more particularly the extent of the interest-rate changes required for stabilizing total spending depends not only on the current economic situation but also on the events which preceded. This information requires careful screening in making any appraisal of the measures that are needed in connection with a particular course of action in the monetary sphere.

Within the broad long-run framework of economic stability—both full employment and price stability—there are several short-run objectives to which reference has been made in earlier chapters when discussing the instruments of monetary policy. These center upon limited stabilization of the money market. They seek to minimize interest-rate fluctuations due to temporary factors. Among such factors are: seasonal variations in the demand for funds, Treasury operations that influence (without deliberate intent) the demand for or supply of funds, and gold movements that do not reflect fundamental economic forces. The plan is for the central bank to put just enough credit in the market, or take just enough out to counteract the effect of the temporary disturbance. In such operations the Federal Reserve System has been generally successful. However, these objectives are regarded as limited in scope, and the monetary

authorities have not hesitated to destabilize money rates in order to advance general economic stabilization.

QUESTIONS AND PROBLEMS

1. "Monetary policy is much more effective in curbing a boom than in helping to bring the economy out of a depression. . . . If the medicine is administered in large enough doses, monetary policy can stop a boom. The trouble is that it is likely to do more than merely stop it . . . monetary contraction can easily precipitate a downswing." (R. A. Gordon, *Business Fluctuations*, New York, 1952, p. 517.) Critically evaluate the role of monetary policy as a stabilization tool in the light of the above quotation.
2. "In the writer's opinion, an outstanding lesson of the forties is that controls as a weapon in the stabilization arsenal have been deflated. Perhaps the most important reason for this is that wartime controls proved, in part, that they postpone inflation rather than suppress it." (S. E. Harris, *Economics of Mobilization and Inflation*, New York, 1951, p. 17.)
 - a. Discuss the above statement.
 - b. Outline your own recommendations for a policy of monetary and debt management in a defense economy explaining how your proposals would avert inflation while assuring adequate sources of war output.
3.
 - a. What do you understand by an "inflationary gap"?
 - b. How can the gap be measured?
 - c. What are its uses and limitations for monetary policy?
4. "There are two principal objections to discretionary monetary power. It robs policy of the very thing which is most needed in monetary matters; namely, certainty with respect to monetary conditions. If the economy is to operate automatically the public must be told that the stock of money will at all times be controlled rigorously in accordance with some pre-established criterion. . . . Expectations would become a major stabilizing rather than a destabilizing influence under conditions of monetary stability which were the consequence of a definite and announced policy." (L. W. Mints, "Monetary Policy and Stabilization," *American Economic Review*, May 1951, p. 191.)
 - a. What possible criteria could be utilized as guides to controlling the stock of money?
 - b. What would be the effects on total economic activity of each of these criteria?
 - c. In the light of your answers to *a* and *b*, do you agree with the quotation? Explain.
5. Grave concern has been expressed over the conflict of government agencies charged with responsibility for exercising control over our fiscal and monetary affairs.
 - a. Critically evaluate the nature of this concern.

- b. How would you propose to solve the problem of conflicting authority over our monetary and fiscal system?
6. "The policy of easy money was *adopted* by the monetary and fiscal authorities in 1933 in order to finance huge deficits. . . . *The policy of depressing interest rates was deliberately encouraged* during the war years in order to tap the capital markets at low cost to finance the military forces, lend-lease and other projects."
 - a. Do you agree that an easy-money policy was adopted in 1933? Give a reasoned defense of your answer.
 - b. Was a policy of depressing interest rates encouraged during World War II? Defend your answer by specific reference to actions taken by the monetary and fiscal authorities.
7. The presence of a large cash surplus provided the Treasury with a powerful instrument for combating inflationary pressure on prices during the postwar period.
 - a. Describe the possible uses and effects of the disposition of the cash surplus in fiscal 1947 and 1948.
 - b. Explain how the management of the public debt could be employed to counteract the inflationary forces then current.

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CHAPTER 25

Federal Reserve Policy: 1914-1939

WE HAVE just considered the broad objectives and methods of credit control. In this chapter and the succeeding one we shall divide the history of Federal Reserve policy into distinct periods so that we may see clearly how the objectives, guides, and methods have changed since the System began operations.

■ THE FORMATIVE PERIOD: 1914-1917

The Reserve banks opened for business on November 16, 1914. From the outset they were faced with the extraordinary situation that accompanied the outbreak of the war abroad. Gold flowed out of the United States, and exports stopped temporarily. Following a brief panic on the stock exchanges, banking settled down to wartime conditions. By 1917 American economic activity was booming. Stimulated by exports, basic production was now 20 percent greater than it had been in 1914. Hand-to-hand money in circulation had risen about 45 percent, and bank deposits had gone up some 65 percent. Prices rose throughout the period, and by mid-1917 they were some 80 percent above the 1913 wholesale level. Under the circumstances the Federal Reserve System was deprived of the opportunity for a slow and careful formulation of policies. Nevertheless, the Reserve authorities were able to make a beginning

in formulating policies dealing with both rediscount and open-market operations.¹

Rediscounts remained small during the period, reaching \$25 million early in 1917. The increase of the monetary gold stock and the lowered reserve requirements instituted by the Federal Reserve Act insured abundant reserves. In regulating rediscounts, the Reserve authorities followed the commercial-loan theory embodied in the act. They decided to look behind the form of the paper offered and consider the uses to which the proceeds were put. Most Federal Reserve banks instituted classified rates, giving preference to trade acceptances, commodity paper, and paper of short maturity so as to encourage member banks to emphasize liquid paper and to popularize the use of trade acceptances. The encouragement of liquid paper was halted somewhat by the 1916 amendment to the Federal Reserve Act which permitted member banks to borrow from the Reserve banks on their own notes secured by government bonds as well as eligible paper.

During the period the open-market policy that emerged was designed to help the Reserve banks keep continuously in touch with the money market through open-market operations, instead of confining themselves to rediscounting in emergencies. However, open-market operations also remained small. Member banks held only small deposits with the Federal Reserve banks, and the Board decided at the time to limit their open-market operations to the sums needed to provide revenue to cover the expenses of operation of the Reserve banks.

■ WAR AND ITS AFTERMATH: 1917-1922

WAR INFLATION: 1917-1919

During World War I the Treasury financed 72 percent of total expenditures by borrowing instead of taxation, and by borrowing at the lowest possible rates. The Federal Reserve authorities followed policies designed to aid the Treasury in achieving its objective. Within the framework so set, the aim of central bank policy was to facilitate the financing of those government expenditures which were not met out of federal tax receipts with a minimum of inflationary effect. The traditional tools of the central banker—open-market operations and the rediscount rate—were used to accomplish this goal. The Federal Reserve banks pursued a policy of low

¹ Throughout Chapters 25 and 26 the reader should refer to Figures 55 (p. 681), 56 (p. 692) and 57 (p. 693), as well as Figure 26 (p. 399).

rediscount rates especially on paper secured by government bonds which encouraged an expansion of credit by the commercial banks and had the effect of holding interest rates down and bond prices up. A change in and reduction of statutory reserve requirements in 1917, concentration of gold holdings in the Reserve banks, and regulations designed to prevent the outflow of gold expanded bank reserves and thereby helped to increase the availability of credit.

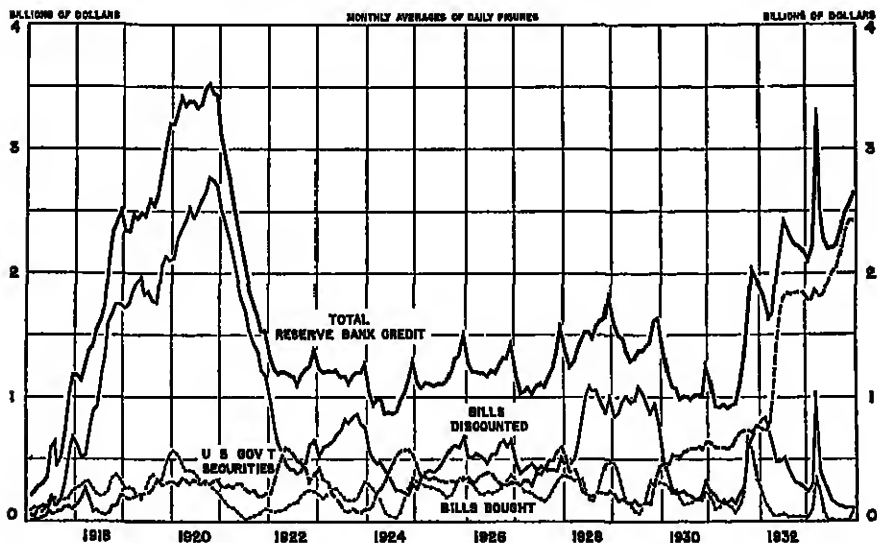
The Treasury sold its obligations both to individuals and to banks. Sometimes it is useful to distinguish between loans from the public and from the banking system. The purchase of bonds by banks is paid for by creating deposits. As a consequence, the money stock is invariably expanded almost as if money had been printed by the government; perhaps the most pertinent economic distinction between these methods of raising funds is that bonds are interest-bearing. On the other hand, if bonds are bought by individuals as an alternative to buying goods and services, then this second method of financing is definitely less inflationary. This is true, however, only if the individuals reduce their consumption below customary levels in order to increase their savings. It is not true when individuals yield to a government's exhortation, as they did during World War I, to buy government bonds and borrow from the banks to do so. Thus, the participation of the commercial banks in war finance must be measured, not solely by their direct purchase of 16 percent of the debt issued to finance the war, but in addition by their loans to customers to enable the latter to purchase government bonds. The result of credit expansion was to increase bank deposits by 27 percent between 1917 and the end of 1919 and hand-to-hand currency by an even greater percentage during this time interval.

The effect of the government borrowing during the war was threefold. It increased the public debt from \$1 billion to \$26 billion. It helped drive prices up during the war and the immediate postwar period. Finally, it hamstrung open-market operations because of reluctance to let interest rates rise and thereby increase the service charges on the newly created debt.

However, this easy-money policy encouraged borrowing by individuals and businesses for all purposes, some of which were not deemed desirable during wartime. In order to prevent this development, checks known as qualitative credit controls or selective controls, were employed. Qualitative controls are essentially rationing devices based on the criterion of use. Applicants for credit are judged not only in terms of their credit worthiness, but also in terms of the expected use of the money to be borrowed. This check had the

dual function of helping to channelize resources into war production and to hold down the expansion of the money stock for purposes not consonant with the war effort. The qualitative controls employed during the war were: limiting the use of credit on the security exchanges, rationing investment credit for new security issues, and exhorting commercial banks not to extend credit to firms whose

FIGURE 55
RESERVE BANK CREDIT, 1917-1933



SOURCE. Board of Governors of the Federal Reserve System.

activities were not essential to the war effort. In the main, these controls had little significant effect in holding down the expansion of the stock of money.

POSTWAR INFLATION: 1919-1920

A brief period of uncertainty as to the business cut-back after the Armistice in November 1918 was followed by boom conditions. In his testimony before the Joint Commission of Agricultural Inquiry in 1921, Governor Benjamin Strong of the Federal Reserve Bank of New York characterized the period from August 1918 until the summer of 1920 as one of "postwar expansion, speculation, and extravagance." The speculative tendency began in March 1919 "to develop to a marked degree, and by gradual stages it worked up and matured into a veritable orgy of extravagance, waste and

speculation; there was, in fact, a competition to buy anything at almost any price." ² He regarded the greater part, if not all, of the expansion that had been suffered during the period of the war as "inevitable, unescapable, and necessary," hence "defensible." By May 1920 wholesale prices reached a peak over 2½ times their 1913 level. Output was sustained at high levels, but the rampant stock and commodity speculation reached its culmination in mid-1920. Credit expansion fed the boom, implemented in part by sharp increase in the volume of rediscounts at the Reserve banks.

Active steps by the Federal Reserve Board to restrain credit expansion awaited completion by the Treasury of its active financing program. The Victory Loan in the spring of 1919 was followed by resort to issues of short-term certificates. Beginning with the close of 1919, rediscount rates were raised and in 1920 four Reserve banks availed themselves of the permission given in the newly enacted Phelan Act to establish progressive rates of rediscount. However, the Reserve System failed to develop an effective open-market technique to reinforce rediscount rate policy. Rediscount policy was supplemented by several other devices to control credit. War paper—that is, loans to carry purchasers of government bonds—was driven from bank portfolios as a result of a successful campaign by the Reserve banks. But member banks did not use the proceeds obtained from the repayment of loans to reduce their indebtedness to the Reserve banks; instead, they increased their own loans and investments. The member banks, too, paid little attention to admonitions to reduce their loans and to discriminate against nonessential credits. The Board issued warnings in June and July 1920, directed particularly at excessive speculation in securities, much of which had been financed with funds borrowed by members against government securities as collateral. But the Board admitted that the warnings "were only a transitory expedient and were given only momentary attention by many banks." ³ Several of the Reserve banks, notably that at New York, also held regular conferences with member banks in an effort to explain the purposes of the act and to suggest reduction in aggregate borrowing.

DEFLATION: 1920-1922

Sharp deflation, world-wide in scope, followed the postwar boom. Wholesale prices fell from a high of 167 in May 1920 to a low of 91 in January 1922, both on a 1926 base. Farm prices

² *Interpretations of Federal Reserve Policy* (New York, 1930), p. 77.

³ Federal Reserve Board, *Annual Report* (1920), p. 12.

proved particularly vulnerable, especially in view of the record crops of 1920. Price declines were accelerated by buyers' strikes against high prices and by a drop in American exports that accompanied the rapid price declines in imported staples such as silk, sugar, and coffee. Industrial production dropped in physical volume from 82 at the opening of 1920 to 55 in the spring of 1921, both on a 1935-1939 base. Business retrenchment developed and widespread reduction of indebtedness by firms ensued.

The assets of the Reserve banks fell as the money stock contracted. Rediscounts declined from a peak of \$2.8 billion in October 1920 to a low of \$397 million in August 1922. The reduction was aided by large imports of gold received in payment for exports, which member banks turned over to the Reserve banks until the end of 1921. In consequence, the reserve ratio of the Reserve banks rose from 43 percent in November 1920 to 71 percent in December 1921.

System policy with respect to credit control during the period may be described most vividly in terms of the discount rate changes at the Federal Reserve Bank of New York. For almost a year, from June 1920 to May 1921, that institution maintained its rate on 90-day paper at 7 percent. From then on it reduced the rate rapidly, $\frac{1}{2}$ of 1 percent at a time, until the rate reached 4 percent in June 1922 and became uniform on the different classes of paper. The policy followed by the System has provided a rich subject for controversy. Critics accuse the System of accelerating deflation by its actions. But the most elaborate investigation of the Board's conduct—that of the Joint Commission of Agricultural Inquiry, Part 2—does not criticize the Board for what it did, but rather for the poor timing of its actions. This criticism is concerned with the Board's failure to establish effective control during the postwar inflation, rather than with its procedure during the succeeding deflation. There are two views regarding policy during the deflation. Some critics hold that the discount rate should have been reduced sooner to arrest deflation and reduce the attendant hardships. Others believed that the rate was lowered too rapidly—that it should have followed and not preceded the downward revision of rates on commercial paper.

■ THE TWENTIES: 1922-1929

From the spring of 1922 to the summer of 1927 the Reserve banks reverted slowly to their original function, namely the financing of the short-term credit needs of industry. The years 1922-1927 witnessed little cyclical change in economic activity: at

first there was a recovery, then a recession followed by stabilization of economic activity.

RECOVERY AND RECESSION: 1922-1924

As recovery from the depression proceeded, basic production rose from a low of 73 in the spring of 1922 to a peak of 107 in the spring of 1923. Subsequent decline brought the index down to 83 in mid-1924. Consumption, however, remained stable, and there was no piling up of inventories. Wholesale prices staged a recovery from 91 at the opening of 1921 to 105 in the spring of 1923 and then receded to 98 by mid-1924. By mid-1924, too, prices of agricultural products had fallen far more sharply than had non-agricultural products. Nevertheless, member bank loans rose steadily beginning with the second half of 1922, as did investments, and forced member banks to resort to rediscounting with the Reserve banks to augment their reserves.

During this period Reserve policy veered from restraint to stimulation. Rise in rediscount rates in the spring of 1923, coupled with sale of government obligations sought without success to check credit expansion. However, the persistent downswing in economic activity in the fall of 1923 caused the Federal Reserve authorities to reverse their earlier policy. Several Reserve banks began a steady lowering of their rediscount rates, while purchase of governments mounted. The Reserve authorities explained that the policy was designed to relieve the tendency towards higher interest rates, to permit member banks to liquidate their indebtedness to the Reserve banks, to encourage foreign borrowing in the American market, to stimulate business recovery, and to place the Reserve banks in a position to check later speculative tendencies. The most noteworthy results, however, were cheaper money rates and increased member bank credit, particularly for speculative loans.

STABILIZATION: 1924-1927

From the fall of 1924 to the summer of 1927 economic activity was sustained at a relatively high level. After basic production advanced from 83 in mid-1924 to 105 at the opening of 1925, there were slight recessions, followed by recovery, in the first half of 1925 and the first half of 1926, and a moderate recession in 1927. Wholesale prices advanced and then receded so that by mid-1927 they stood at 94 in contrast to 98 in mid-1924. But the really outstanding development of these years was the amazing rise

in stock market transactions and stock prices. The latter zoomed almost 50 percent from mid-1924 to the close of 1925, fluctuated somewhat in 1926, and resumed their rapid climb in 1927. Over the 3 years, security loans of reporting member banks rose 40 percent, while investments rose 20 percent, and "other" (commercial) loans rose by only 12 percent.

Beginning in 1925, there were expressions of alarm that an excessive volume of credit was being diverted to speculation. Yet, for the most part, during the 3-year period the Federal Reserve authorities took no major steps with respect to the money market. They were disinclined to bring about a rise in money rates, partly because of the international financial situation. European nations were trying to return to the gold standard, and the United States, which had a large "favorable" trade balance, was exporting capital to finance its exports of goods and simultaneously permitting gold to be exported to strengthen foreign currencies. In 1925 the Federal Reserve System agreed to permit the Bank of England to draw up to \$200 million in gold from the Reserve banks. During 1926, however, gold flowed into the United States in large amounts, and in 1927 the influx was even larger. Disturbed by the continued exportation of gold from their own countries, the nations abroad held that our imports of gold were effecting a reduction in the world's monetary stock because we sterilized all the gold received instead of permitting it to enter the banking system and serve as a basis for credit expansion. The United States was accused of not living up to the rules of the gold standard "game."

STOCK MARKET BOOM: 1927-1929

In 1927 the Federal Reserve pursued an easy-money policy, as it had in 1924. Although the year witnessed a moderate business recession, the stock market showed no effects of the curtailment of business activity; the general average of stock prices was 75 percent higher in 1927 than it had been in 1924. Discount rates were reduced from 4 to $3\frac{1}{2}$ percent at all the Reserve banks, in one case at least despite the protests of the bank. Rediscounts, open-market bill purchases, and acquisitions of government obligations all went up in that year. The System's easy-money program is to be explained in the light of both foreign and domestic factors. Low money rates, it was thought, would make it cheaper for Europe to borrow in this country and purchase American agricultural products with the proceeds of the loans. Furthermore, easy money would strengthen the foreign exchanges and help preserve the gold stand-

directly concerned with stock exchange activities, to avoid the charge of interference in that area. Nevertheless, the Reserve System took positive steps. During the spring the four remaining Reserve banks raised rediscount rates to 5 percent, and buying rates for bankers' acceptances were also increased. These rate advances the Board reinforced by issuing warnings against excessive absorption of credit by the stock market and urging banks to cooperate in diverting funds to agricultural and business uses. Reserve banks refused rediscounts for banks which were using the funds to make call loans on stock market collateral. Nevertheless, in the late spring and early summer stock prices began to advance again, and there was evidence of industrial overexpansion in some fields. The New York Reserve Bank, which had urged the easy-money policy in both 1924 and 1927, now urged upward revision of rates. The Board compromised by raising the rediscount rate at New York alone from 5 to 6 percent in August as a gesture of disapproval of stock market conditions, and at the same time reduced the buying rate on acceptances. Thus, acceptance holdings rose, while rediscounts fell. Rates paid on commercial paper remained above 6 percent to the end of October, but call loan rates dropped to 6 percent, lower than they had been in more than a year. Member bank total loans and investments, which had not increased since 1927, rose from \$22.6 billion on August 7, 1929, to \$24.4 billion on October 30.

From the high point in September stock prices sagged gradually until the middle of October, when the market suffered the most precipitous drop ever recorded. As in 1926, Federal Reserve policy sought primarily to assist the banks. There was a large shift from brokers' loans to direct collateral loans to bank customers. Some leading bankers also attempted to help the market by large stock purchases which they hoped would prevent demoralization and make possible an orderly adjustment to a lower level of prices.

■ THE THIRTIES: 1929-1939

CRISIS AND DEPRESSION: 1929-1933

In the period from 1929 to 1933 attention shifted from the speculation in the stock market to the condition of business and industry. In an effort to aid business recovery, the Reserve System revived the easy-money policy of low discount rates and heavy open-market purchases. This program it pursued with only two lapses—the crisis of 1931 and the banking holiday of 1933.

Business, which had begun to recede in the summer of 1929, con-

tinued to move downward during this period. Wholesale prices dropped almost steadily from about 95 in the middle of 1929 to 60 early in 1933, despite the efforts of the Farm Board and private producers to halt the decline. Basic production followed the same trend, falling from 125 in 1929 to 60 in the spring of 1933. Businessmen were interested in keeping their inventories and bank loans down to a minimum, and speculators sold their security holdings and liquidated their bank indebtedness. Business conditions abroad were even more depressed than in this country so that foreign capital continued to flow to the United States; the \$694 million increase in the gold stock from October 1929 to August 1931 was almost as great as the influx of 1921-1924.

The Federal Reserve continued its easy-money policy; rediscount rates were lowered further, and more open-market purchases were undertaken. By June 1931 the New York bank had cut its rate to $1\frac{1}{2}$ percent, and other Reserve banks' rates ranged from 2 to 3 percent. Rates on acceptances fell from $5\frac{1}{8}$ percent in the autumn of 1929 to $1\frac{1}{8}$ percent at the close of 1930. Despite these actions, the volume of rediscounts continued to shrink as did acceptance holdings. While the Reserve banks' ownership of United States Governments rose to heights never before attained, these holdings were insufficient to sustain the volume of Reserve credit outstanding, which declined from \$1.6 billion late in 1929 to less than \$950 million during the first half of 1931.

For almost 2 years following the stock market crash of 1929, the Reserve System followed the simple policy of open-market purchases and low rediscount rates. Then in 1931 a series of catastrophes rocked the European financial structure. The most spectacular was the collapse of the Austrian Credit Anstalt in May 1931. Credit stringency and banking difficulties in Central Europe, notably Germany, spread to other countries; Great Britain tried to aid the stricken nations on the Continent, but was forced in turn to call upon the United States for assistance. Finally, on September 20, 1931, Great Britain suspended gold payments, and a number of other countries followed suit or introduced control of the foreign exchanges. Confidence abroad was badly shaken, and there was a pronounced flight of capital to centers whose currencies seemed relatively strong. This flight of capital, and the anticipation of losses on sterling, caused leading central banks to convert their foreign assets into gold.

In the United States these events further undermined a state of uncertainty already aggravated by heavy bank failures. Reflecting the widespread lack of confidence, currency in circulation rose by almost \$800 million from the close of 1929 to the close of 1931.

Over the 2-year period, adjusted demand deposits fell from \$22.8 billion to \$17.4 billion. During the European crisis gold left the country; gold stocks dropped \$702 million in September and October 1931.

To meet both the increase in circulating money and the drain of gold, the Reserve System had to increase its earning assets enormously. Furthermore, in order to protect its gold position the System instituted a rapid advance in rediscount rates. By the end of November ten banks had a $3\frac{1}{2}$ -percent rate and two had a 4-percent rate. The Glass-Steagall Act, designed to release gold by permitting the use of United States Government obligations to secure Federal Reserve notes, was rushed through Congress in order to "save the gold standard."

The emergency passed, and the System reverted to its policy of monetary expansion promptly and with renewed vigor. Rates were again reduced until at mid-1932 they stood at $2\frac{1}{2}$ percent in New York and Chicago and at $3\frac{1}{2}$ percent elsewhere. Bill purchases reached a peak in October 1931, rediscounts in February 1932. However, purchases of United States governments rose over \$1 billion between the end of February and the close of June 1932, partly in order to offset an outflow of gold but more largely to build up the reserves of member banks and thereby create easy-money market conditions. During the first 6 months of 1932 money in circulation rose slightly and was 16 percent higher than at the end of 1930, despite the intervening decline in wholesale prices, business activity and payrolls. Adjusted demand deposits, however, fell \$1.8 billion during the first 6 months of 1932, to \$15.6 billion; the latter figure represented a 25-percent decline since the close of 1930. Deposit turnover in 1932, as measured by bank debits to deposit accounts in 141 cities (including New York) was only about one third that of 1929 and half that of 1930. The member banks maintained a high degree of liquidity by reducing commercial loans and selling bonds and thus reducing the volume of their deposits.

THE CRISIS OF 1933

In the autumn of 1932 there was an upturn in business activity. The run on the dollar was terminated; cessation of the epidemic of bank failures and more salutary international relations all furthered improvement in industrial and financial conditions. Commodity prices rose from their June lows, trade and business activity increased, and the speculative markets rebounded. But the business revival proved abortive, and public confidence was again

shaken by distrust of the banks, and by the Insull and the Kreuger and Toll scandals. A new wave of currency hoarding was touched off; deposits were withdrawn from some banks to be redeposited with others, presumably stronger ones. The shifting of deposits led to a liquidation of assets on the part of those banks which were considered less sound; the liquidation, in turn, caused a further decline in security prices. Beginning with the Nevada banking holiday in October 1932, there were a number of moratoria; of these, the Michigan bank holiday of February 18, 1933, was especially disturbing.

Member banks met the increased demands for currency and gold in several ways. Bills discounted at the Reserve banks rose sharply, and member banks' reserve balances were drawn down; Reserve banks' purchases of bills mounted as did their purchases of United States Government securities. On March 3 reserve requirements were suspended for 30 days, but little use was made of this privilege because the climax was capped on inauguration day, March 4, when the new President declared a national banking holiday.

The measures adopted during that banking holiday restored public confidence; currency came out of hoarding, and by August money in circulation had dropped by about \$2 billion from the high of \$7.5 billion reached early in March. Member banks reduced their borrowing; rediscount rates were lowered and open-market purchases continued. By the end of 1933 excess reserves of member banks had risen to over \$800 million.

The reopening of the banks marked the opening of a new era in Federal Reserve policy. Banking policy was coordinated with the administration's entire recovery program. Reorganization of the Reserve System was undertaken in the banking legislation of 1933 and 1935. A primary objective of the new administration was to raise prices and stabilize them at the 1926 level. The so-called Thomas Inflation Amendment to the Agricultural Adjustment Act of May 12, 1933, placed at the disposal of the President for use in his discretion four devices, each representing one school of thought as to how prices could be raised by means of monetary and credit expansion.⁴

⁴ The objectives, it is true, were stated more broadly in the authorization given the President to act in his discretion under one of the following conditions:

1. Foreign commerce is adversely affected by the depreciation in the value of the currency of other governments in relation to the present standard value of gold.
2. To regulate and maintain the parity of currency issues of the United States.
3. An economic emergency requires credit expansion.
4. Credit expansion is needed to secure by international agreement a stabilization at proper levels of the currencies of various governments

1. Open-market purchases by the Reserve banks of government obligations or of securities of corporations in which the government is a majority stockholder, and direct purchase of Treasury bills or other government obligations, could be made up to the aggregate sum of \$3 billion. If the Reserve banks' requirements must be suspended because of such purchases, no graduated tax on reserve deficiencies need be imposed, nor need there be any automatic increase in Reserve bank discount rates. With the Treasury's approval, however, the Board might require the Reserve banks to take such action as was deemed necessary to prevent undue credit expansion.
2. If the Board and Reserve banks refused assent, or if the operations undertaken under device (1) proved inadequate, or if the President deemed it necessary for other reasons, three additional steps were permitted. United States notes could be printed in an aggregate sum of \$3 billion to meet maturing obligations and to purchase United States obligations. These notes were to be retired at the rate of 4 percent a year.
3. Unlimited coinage of silver, as well as gold, could be made at such weights (and hence ratio) for both metals as the President might determine. Furthermore, for 6 months the President could accept silver (at no more than 50 cents an ounce, and aggregating no more than \$200 million) in payment of principal or interest on debts due this country by foreign governments. The silver was to be coined, and silver certificates might be issued against it.
4. Devaluation of the dollar, by reduction of not more than 50 percent of its weight in gold was permitted.

No less important than these provisions were the gold embargo and anti-hoarding measures. These were made public first by Presidential proclamation, and then confirmed by a joint Congressional resolution of June 5, 1933, abolishing retroactively the gold clause and gold redemption.

RECOVERY: 1933-1935

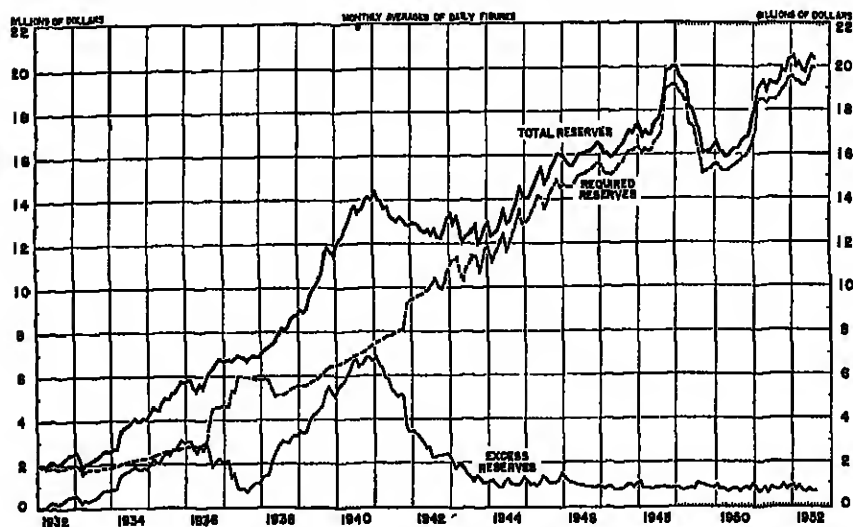
Business made substantial gains in the second quarter of 1933. This recovery was followed by a decline in the price of farm products and raw materials as well as in industrial production. The "easy-money bloc" clamored for a program of monetary expansion.

The return flow of currency from the public caused an increase in member bank deposits. Reductions in member bank borrowings

and increases in their reserves continued and reflected principally open-market purchases of government securities by the Reserve banks. During 1933 the Reserve banks purchased \$580 million of governments. At the end of the year member bank indebtedness was below \$100 million for the first time in many years; member bank excess reserves reached \$800 million. In conjunction with the policy of open-market purchases, the Reserve banks reduced their rates on

FIGURE 56

REQUIRED AND EXCESS RESERVES OF MEMBER BANKS



SOURCE: Board of Governors of the Federal Reserve System.

discounts and acceptances. The New York rate was cut in gradual stages from $3\frac{1}{2}$ percent to $1\frac{1}{2}$ percent. By the end of 1933, too, the public's withdrawal of currency and gold had stopped. Subsequently, the banks' excess reserves increased, mainly as a result of the large gold imports into this country which began after the re-establishment of a fixed price for gold in January 31, 1934. At the close of the decade the growth of excess reserves was closely tied up with gold imports.

Business improvement continued in 1934 and 1935, although the volume of business was still below pre-depression levels, and unemployment remained an obstinate major problem in the economy at large. Security activity and prices increased, but there was little change in the amount of bank credit employed in the stock market. During 1934-1935 the Federal Reserve banks continued to reduce

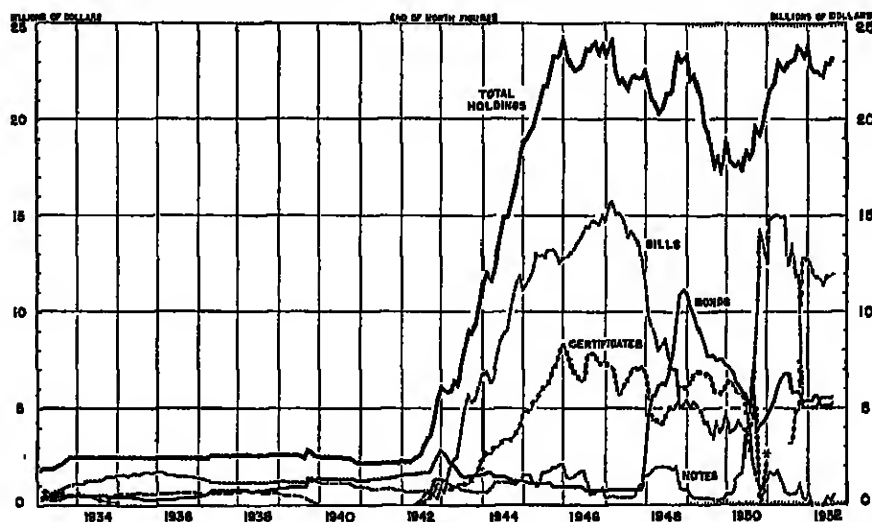
their rediscount rates, in line with the general decline in money rates, until at the close of 1935 they stood at $1\frac{1}{2}$ percent at two Reserve banks and 2 percent at the other ten. The Board made no use of its power to reduce excess reserves by engaging in open-market operations or by increasing legal reserve requirements, a power newly granted by the Banking Act of 1935. Instead, it refrained from action on the ground that there was no evidence of overexpansion of economic activity.

ATTEMPTS AT STABILIZATION: 1936-1939

Industry and trade continued their upward movement during 1936. The national income reached \$63.8 billion for the year, as compared with the low of \$39.5 billion in 1932. In the

FIGURE 57

RESERVE BANK HOLDINGS OF UNITED STATES GOVERNMENT SECURITIES



* No certificates outstanding from January 1, 1951, to June 15, 1951.

SOURCE: Board of Governors of the Federal Reserve System.

latter part of 1936 commodity prices advanced sharply. Member bank reserves were still piling up, but the Board of Governors reduced excess reserves in August by raising required reserves by 50 percent. At the same time, the Board announced that the Federal Reserve System would continue its policy of maintaining easy-money conditions. Late in 1936 the Treasury took steps to counteract

further increase in excess reserves arising from gold imports by instituting a program of gold sterilization.

During 1936 security prices advanced steadily with stock prices showing a gain of 25 percent for the year. Although the security purchases were accomplished largely without use of bank credit, toward the end of the year stock exchange firms reported an increase of about 10 percent in advances to customers for margin trading, and there were similar rises in loans by banks to brokers and dealers in securities. In two steps early in 1936 the Board, acting under powers granted by the Securities and Exchange Act of 1934, raised the margin requirements on loans made by brokers and dealers in securities to 55 percent. In 1936, too, bank loans for commercial and industrial purposes rose for the first time since 1929, and banks began to turn to other securities instead of concentrating their holdings in government obligations.

During the first part of 1937 economic activity continued to show rapid increase. Security prices and commodity prices continued to rise. Since the gold inflow had continued, excess reserves reached \$2.1 billion by February. Therefore, the Board increased the reserve requirements the remaining 50 percent, one half to be effective March 1 and the other half May 1. Following this announcement, sales of bonds by member banks increased, partly to take advantage of the higher level of bond prices but chiefly to meet the increased reserve requirements and to meet withdrawals of balances held in the larger centers by banks in the interior. Bond prices, therefore, registered a sharp decline.

In April the Federal Open Market Committee announced the beginning of a new open-market operation designed to "exert its influence toward orderly conditions in the money market" and to facilitate member bank adjustments to increased reserve requirements. Between April 4 and April 28 the System increased its holdings by \$96 million, and thereafter government and corporate bond prices rose steadily. In August and September rediscount rates were lowered; at the New York bank the rate was now 1 percent, the lowest central bank rate in history, and at all other banks it was $1\frac{1}{2}$ percent. The effect of all these measures was once more to increase member bank excess reserves to about \$1 billion.

The recovery of 1935-1937 was aided by the income-stimulating expenditure of the federal government. But in 1937 net federal expenditure in excess of receipts fell from \$3 billion to almost zero. In the latter part of 1937 backlogs of orders on which industry had been operating were almost exhausted, and inventories were piling

up. Prices and consumers' incomes had not increased as anticipated, and a period of rapid sale of inventories set in. The index of industrial production fell from 116 to 84 in December, and both commodity prices and incomes declined as well. The stock market broke, and by November prices had fallen 40 percent from their March peak; government securities also declined in price. It was to counteract the decline in government security prices that the System again engaged in open-market purchases in November. Since security loans diminished as security prices fell, the Board reduced margin requirements for both banks and brokers from 55 percent to 40 percent, effective November 1.

In 1938 business recovered some of the losses of the preceding year. Employment, payrolls, and national income rose. The upswing continued in 1939, and the outbreak of the war in Europe in September raised business activity to an even higher level. Income payments and security prices rose, while industrial production reached a new postdepression high. Recovery was aided first by a new Treasury policy of sterilizing only gold imports in excess of \$100 million in any quarter, and then by transferring to the Reserve banks in April the \$1,183 million of gold formerly held in its inactive account. That month the Board reduced reserve requirements by one eighth, which added another \$750 million to excess reserves. Together with a tremendous influx of gold these measures raised excess reserves to about \$5.5 billion at the close of 1938.

The principal channel for Federal Reserve activity during 1939 was open-market operations. In 1939 the System revived the practice started in 1937: attempting to exert a direct influence upon conditions in the capital markets, it ceased to maintain a constant amount of securities in its portfolio. In the latter part of August 1939 offerings of governments were finding few buyers, and prices began to tumble. When war broke out, the System made substantial purchases of government obligations in the open market, "with a view to preventing the development of disorderly conditions or unreasonably abrupt decline in prices." Many banks cooperated with the Reserve banks during this period by refraining from selling United States securities. Toward the end of September prices of government and high-grade corporate obligations revived, and the System sold some of its portfolio.

QUESTIONS AND PROBLEMS

1. a. By what different means were the reserves of the Federal Reserve banks built up between 1914 and 1917?

- b. How did the growth in the government debt serve to increase the volume of Federal Reserve notes and deposits?
- c. What determined the maximum amount of Liberty bonds that banks as a whole could finance, either by direct purchase themselves or by loans to their customers against the bonds as collateral?
2. a. What requirements for additional credit appeared during the upswing in business that began in the spring of 1920? Which was most important?
- b. Why did large gold exports appear in 1919 and 1920, and what effect did they have upon the lending capacity of the Federal Reserve banks and member banks?
- c. In just what ways do you think Federal Reserve credit policy was at fault in 1919 and 1920?
3. a. Analyze carefully the guides to credit policy enunciated by the Federal Reserve Board in its *Annual Report* for 1923.
- b. To what extent and at what times did the policy actually pursued between 1924 and 1929 fail to conform to these guides?
- c. In your estimation to what extent was the stimulus of economic activity during the 1920's the result of that policy?
4. Indicate the particular credit policies that arose in connection with the following:
 - a. The inflow of gold in the early 1920's.
 - b. The depression years 1924 and 1927.
 - c. The efforts to check the stock market boom of 1928-1929.Illustrate your answers by reference to Figures 26 and 55.
5. Despite the mobilization of reserves under the Federal Reserve System and the machinery developed for avoiding panics, there occurred in 1933 the most disastrous banking panic in American history.
 - a. Does this indicate that the Federal Reserve System is unsound in principle?
 - b. Wherein did the inadequacy of the System lie?
6. It is a striking fact in recent years that the more the government debt has been increased, the lower has become the rate at which the government has been able to borrow.
 - a. How do you explain this phenomenon?
 - b. Explain the relation of this fact to Federal Reserve policy during the depression.
7. "Governments in pressing need of money always appear able to procure it by one means or another." (Brookings Institution, *The Recovery Problem in the United States*, Washington, 1936, p. 462.)
 - a. List the various measures employed by the administration from 1933 on which were designed to enhance the government's sources of funds.
 - b. What was the major source of funds for the government from 1932 to 1939?
8. In your opinion what validity is there to the assertion that the increases in legal reserve requirements imposed in 1936 and 1937 and the

sterilization program instituted in 1936 contributed to the business recession in 1937?

9. "During the first quarter century of its operation the Federal Reserve pursued policies that, though not always properly timed, adequately emphatic, or entirely consistent, were in general harmony with the main objective of endeavoring to contribute to economic stability. That is, except in time of war." (E. A. Goldenweiser, *Monetary Management*, New York, 1949, p. 59.)
- a. Give an illustration of each of the three exceptions.
 - b. Why is time of war excepted?

SELECTED REFERENCES

See close of Chapter 26 for references to both chapters.

CHAPTER 26

Federal Reserve Policy Since 1939

THIS chapter is designed to critically examine Federal Reserve policy since 1939—a period which encompasses World War II, the postwar period and the outbreak of hostilities in Korea. The material is divided into four parts which correspond with major phases of American war and postwar experience. First, there is the period from the outbreak of the war in Europe during the latter months of 1939, to this country's participation in the conflict following Pearl Harbor. Second, there is the period from the beginning of 1942 up to the end of 1945, when final victory was achieved. The third period covers the postwar period through the year 1949. The last period deals with the events associated with the outbreak of hostilities in Korea to the close of 1952. Before we discuss Federal Reserve policy since 1939 it will be necessary to analyze the over-all problem of waging a large scale war in relation to the avoidance of inflation.

■ THE ECONOMIC ASPECTS OF WAR

The basic economic problem of successfully waging war is that of maximizing production. This involves attainment of a level of production that will permit fulfillment of the basic requirements of the population and at the same time provide the military forces with a margin of superiority over the enemy in both manpower and material. Thus, our economy must achieve maximum

production. Next we must attempt to effect an allocation of resources between the civilian sector of the economy and the military establishment that will assure the war effort the maximum volume of men and supplies without jeopardizing the total volume of production.

In the United States the general objective of war economics was to achieve the necessary volume of production and number of military personnel with as little recourse to totalitarian measures as possible, and so retain the basic political values of freedom and liberty. In view of the relative resource superiority of the nation, it was possible to pursue the national interest in these two directions simultaneously although some diminution of the area of free choice on the part of the civilian economy was manifestly necessary. Consequently, a system of allocations and other direct controls was developed in order to direct productive capacity into supplying the needed goods and services for the successful prosecution of the war effort.

The financial aspects of the emergency arose out of the decision to conduct the conflict largely within the framework of the traditional institutions of a market-price economy without reversion to the total control devices that obtained in many foreign countries. Once having made the decision, governmental financial policy had to be directed toward two specific ends. First, it was necessary that the credit of the Treasury be maintained at an unimpeachable level. This meant that the fiscal monetary apparatus must be in a position to provide funds at all times to meet the needs of the Treasury. The second consideration was to finance the war without permitting the degree of inflation that characterized our own past national experience as well as that of other nations.

THE PROBLEM OF INFLATION

War inflation is a rather obvious concept. The simple fact is that incomes of the people engaged in the civilian segment of the economy increase without a corresponding increase in the volume of civilian goods available for consumption by the community. Supplies of commodities are short in relation to the aggregate demand, swollen by the increased purchasing power which results from income payments made in the production of war materials which never enter civilian markets. Thus, incomes are the consequence of the total output, while civilian commodities are the result of the productive efforts of but part of the community. Un-

less checked by anti-inflationary measures people bid up the prices of the available civilian goods.

The structure of the American monetary fiscal organization permitted three principal methods of providing the funds with which the war could be financed. All three methods must be examined in the light of the dual criteria of the requirements of the Treasury and the possibility of avoiding inflation.

TAXATION

The most straightforward control measure is to finance the entire cost of the war by means of taxation. In this way the excess purchasing power represented by the value of war production is withdrawn by the Treasury, leaving the civilian members of the community with only sufficient incomes to purchase the civilian output at the prevailing level of prices. Thus, the expansion of bank deposits occasioned by the expenditures of the Treasury is offset by a corresponding contraction in deposits as balances are transferred from the accounts of taxpayers to the account of the Treasury. As long as the entire value of the output purchased by the government is taxed away from the members of the community, the result of Treasury spending for war goods leads to no net increase in total deposits. However, if the community supplements its income through the use of previously acquired assets or reduces its current rate of saving, then inflation will result to the extent of the additional purchasing power so used.

From the viewpoint of the finance mechanism alone, inflation can be avoided for the most part by an appropriate tax program. This does not mean that the financing of the entire cost of the war through taxation would have been necessarily a wise policy. The oppressive nature of some of the necessary tax measures may have caused undue hardship to many low- and middle-income families and conceivably could have reduced incentives which in turn would lead to reduced output per worker, dampened managerial incentives, and generally could have jeopardized the high volume of production so essential to military success. Likewise, an appraisal of the considerations of practical politics indicates the manifest unpopularity of financing the entire cost of the war out of taxation—considerations which rightly or wrongly made such a program all but impossible. It would appear, therefore, that the actual program was designed to achieve a compromise between a level of taxation which would produce the largest amount of revenue consistent with

the maintenance of efficient production and high civilian morale and the exigencies of the political considerations.

BORROWING FROM THE NONBANK PUBLIC

The excess of federal expenditure over tax revenues may be obtained by borrowing from the nonbanking sector of the economy. Under these circumstances the untaxed excess purchasing power received by the community in payment for the production of war materials is used to purchase government bonds. The income is thereby transferred from the nongovernment sector to the government sector and does not create an excess demand for civilian goods. The deposits of commercial banks are reduced when the community exchanges money for bonds and are restored when the government pays for its purchases of goods and services. The net effect of this transaction is to keep the stock of money constant. The effects, therefore, are similar to those obtaining when the funds are raised through taxation, in that inflation is in large measure avoided while this borrowing from the nonbank public continues. One important qualification is that the community now holds claims against the Treasury which can presumably be transformed into cash at a later date. These claims are therefore potentially inflationary as the community is in a position to exchange bonds for deposits at the conclusion of the conflict.¹ Thus, such a program merely postpones the inflation problem.

BORROWING FROM THE BANKING SYSTEM

Commercial Banks When the Treasury borrows from the commercial banks, the result is an increase in the monetary stock. The banks merely increase their deposit liabilities and their assets in the same manner that both deposits and loans are increased when individuals or businesses borrow from the banks. The mechanics of such a program involves the purchase of government obligations from the Treasury with payment being made by the transfer of reserve balances from the account of the purchasing banks to the account of the Treasury on the books of the Federal Reserve banks. When the Treasury spends the money, the funds are

¹ J. M. Keynes discusses two notions of importance in his book *How to Pay for the War* (New York, 1940). First he suggested a system of compulsory savings termed "deferred pay" which would force the community to buy government debt in sufficient volume to offset the tax deficit. Second, he realized the danger of postwar inflation and therefore included in the program a capital levy designed to remove part of this overhang of liquid assets after the war.

deposited by the recipients in the commercial banks with a consequent shifting of balances from the account of the Treasury back to the reserve balance accounts of the commercial banks. The net result is an increase in the government debt held by the commercial banks and a corresponding increase in private deposits held by the community. Where the commercial banks hold government deposits, the process is as direct as in the aforementioned case of the banks making commercial loans. The ability of the commercial banks to expand their deposits is, of course, dependent upon the amount of reserves held by these institutions and the legal reserve ratios in effect at the time the transactions take place.

Federal Reserve Banks^o Treasury borrowing from the central bank is the most expansive method of Treasury financing. This method of deficit financing involves the sale of bonds to the Federal Reserve banks and the crediting of the Treasury's deposit account, thus correspondingly increasing the assets and the liabilities of the Federal Reserve banks. When the Treasury uses the money to make payments for goods and services purchased, the Federal Reserve banks merely transfer the funds from the Treasury's deposit account to the reserve balance accounts of the commercial banks as they present the Treasury's drafts for payment. Therefore, not only are the deposits and the reserve balance accounts of the member banks increased *pari passu* with the volume of Treasury debt issued, but what is especially significant, these reserve balances may be used as the basis of a multiple expansion of commercial bank deposits. The expansive character of this method of deficit financing results from the increase in the stock of money as well as from the encouragement given to the banking system to pursue an expansionary policy. In a real sense this method of financing government requirements is similar in its effects to the use of the printing press to issue paper money.

■ THE PERIOD OF WAR PREPARATION: 1939-1941

The outbreak of the European war in September 1939 found the American economy (with a large pool of unemployed resources, both manpower and material) struggling to recover from the depression. Despite a decade of population growth, the physical index of production stood at 109 (1935-1939 = 100) as compared with 112 in 1929, and unemployment was estimated in excess of 8 million out of a total labor force of 55 million. The significance of this situation lay in the simple fact that output could

be increased tremendously by drawing unemployed workers and idle plant capacity into production.

The monetary system was also in a strong position to expand. In June the money stock of \$34 billion included \$7 billion of currency in circulation and \$27 billion of demand deposits (adjusted). Excess reserves amounted to over \$5 billion, and the monetary gold stock exceeded \$17 billion, of which less than \$7 billion was required to be held against the liabilities of the Federal Reserve banks.

The first impetus to monetary and industrial expansion was provided by a wave of panic buying in September 1939, which caused wholesale prices to rise from 75 in August to 79 in October. By October 1940 the index had declined slightly. Increased production more than kept up with increased demand. It is characteristic of the change from underemployment to near-full employment, that from the summer of 1939 to the summer of 1940, manufacturing output increased by 15 percent but the aggregate labor hours performed increased only by 9 percent;² increases in productivity offset increased labor cost.

After the first buying panic subsided, the stimulus to demand came principally from orders placed by European belligerents—reinforced by Lend Lease from early 1941. Consumer outlays, gross private capital expenditures, and government expenditures—swollen by the rearmament program—all continued to increase. Income payments and industrial production rose rapidly in the year ending June 1941. Whereas the wholesale price index had increased moderately in the year ending June 1940, evidences of substantial price inflation were demonstrated in the rise of over 15 percent in the wholesale price index in the following twelve months.

The Federal Reserve System viewed its function as providing the lubricating mechanism of the defense boom. During the latter months of 1939 only minor changes were made in the discount rate so that the established level of 1 percent and $1\frac{1}{2}$ percent was maintained. Reserve requirements were unchanged below the statutory maxima at $22\frac{3}{4}$ percent, $17\frac{1}{2}$ percent, and 12 percent against demand deposits and 5 percent against time deposits. The major vehicles for relaxing credit should the need arise were open-market purchases of government obligations and permitting the predictable inflow of gold to exert its full effect upon the reserves of the banking system. Aside from temporary stabilizing operations, the Reserve banks found it unnecessary to become purchasers of government debt on net balance. From 1939 through 1941 government security

² W. Fellner, "War Finance and Inflation," *The American Economic Review* (June 1942), p. 238.

holdings of the Reserve banks actually declined moderately from \$2.5 billion in 1939 to \$2.3 billion at the end of 1941.

By the spring of 1941 concern over the problem of inflation was evidenced in official circles. The dangers that the United States would become an active belligerent in the European war increased the hazards of inflation. Realizing the potential impact on the economy of increasing government expenditures without proportionately increasing tax revenues, the Treasury and the Reserve System pursued the adoption of anti-inflationary measures. Taxes were increased in the Revenue Act of 1941, and efforts were made to stimulate savings through the purchase of defense bonds. Selective price control on a more or less informal basis was utilized late in 1941. Despite the fact that excess reserves of the member banks fell sharply, the Reserve System took no measures to aid the money market. Reserve requirements were raised to their legal maxima late in the fall and Regulation W (dealing with installment credit terms) was put in effect in September. The entire structure of interest rates began to rise in late 1941, and the rise was allowed to go unchecked until the spring of 1942.

■ THE PERIOD OF ACTIVE UNITED STATES PARTICIPATION: 1942-1945

After the attack on Pearl Harbor brought us actively into the war, the national concentration on war output began in earnest. The remarkable characteristic of the American economy was its ability to meet military requirements and at the same time increase total civilian output. Increases in civilian employment, longer working hours, and increases in output per worker made this accomplishment possible.

TREASURY FISCAL POLICY

Beginning in the latter part of 1941 the Treasury appealed to Congress for sharp increases in taxes. In that year income tax exemptions for individuals were reduced and rates were increased; the total number of taxable returns rose from less than 4 million in 1939 to more than 42 million in 1944. Corporate income taxes were raised, and an excess-profits tax was imposed. Finally there were increases in the excise taxes.

From July 1, 1941, through June 30, 1946, the Treasury spent some \$370 billion. Total tax receipts during this period amounted to \$169 billion, leaving some \$201 billion to be financed through

borrowings. Thus, some 46 percent of the total expenditures were raised by way of taxation as compared with approximately 28 percent raised by taxation during World War I (1917-1919). This can hardly be called the maximum that could have been so raised without impairing either our basic institutions or the level of output. In England the percentage of war expenditures raised through taxation was somewhat higher,^a and it must be borne in mind that the higher living standards prevailing in the United States would have made tax rates at the same percentage of incomes less onerous than in England.

In addition to the \$201 billion which was borrowed to finance expenditures, an additional \$13 billion was borrowed to build up the Treasury's cash working balance. The \$214 billion which the Treasury was unable to obtain by taxation was raised by the sale of debt obligations to the banking system, other financial institutions, and the general public. Approximately \$128 billion of government obligations were sold to nonbank investors. Since these sales reduced income available to purchase civilian output they can be viewed as noninflationary during the war. They did, however, increase the liquid asset holdings of the community which created a serious postwar inflationary potential. Sales to the Federal Reserve banks totaled some \$22 billion during the period. The sales were hyperinflationary as they increased member bank reserve balances by a like amount, thus making a multiple expansion of bank deposits possible. At the same time some \$64 billion of debt obligations were sold to the commercial banks which expanded the money stock by a like amount.

Treasury debt policy sought to attain three principal objectives. First, the Treasury sought to place as large a proportion of the debt with nonbank investors as could be successfully sold. Second, the Treasury sought to finance the war at historically low interest rates presumably to minimize the burden (interest cost) of the national debt. The third objective of the Treasury was to maintain the federal credit by keeping the bond market stable and to permit no unsold residue of its public bond offerings to exist. Now, it is apparent that these ends are not necessarily compatible. Placing the debt entirely with the public while at the same time refusing to offer the inducement of higher interest rates necessitated a resort to a number of devices. Issues were tailor-made for different classes of investors, with

^a In 1943-1944, the percentage of total revenue to total expenditure was 44.4 percent in the United States and 61.2 percent in the United Kingdom. See U. S. Treasury Department, *Comparison of Taxes in the United States, United Kingdom and Canada* (Washington, 1945), p. 5.

the general public being offered nonmarketable obligations which could involve no capital losses if redeemed prior to maturity. To induce the purchase of these obligations, the Treasury engaged in active sales promotion, using all the modern devices of high-pressure advertising, complete with singing commercials and motion pictures. Also, the crusade for low interest rates made the problem of maintaining stability more difficult as it required dependence, in large measure, on short-term issues which in turn meant that the Treasury would be constantly engaged in marketing new obligations for refunding purposes. It is at least debatable that some increase in interest rates could have interested more individuals in the purchase of government bonds and thus reduced the need for much of the short-term debt; especially since much of this short-term debt found its way into the banking system, thus swelling the stock of money.

FEDERAL RESERVE POLICY

The Reserve System's exercise of monetary restraint which ensued during most of 1941 ended early in 1942. Rising interest rates and lagging bond sales were endangering the financing of the public deficit.

After the attack on Pearl Harbor the Board of Governors issued a statement to the effect that the Reserve System could and would see that the Treasury was assured of all the funds needed for war finance. The debt program of the Treasury became the principal source of policy for the Federal Reserve System. The System was to be the special instrument of the Treasury in promoting the war finance program. During the active war period inflation, although a source of major concern, was left to the agencies of direct economic controls, such as the Office of Price Administration, the War Production Board, and the War Labor Board, and to the selective instruments of control at the disposal of the monetary authorities.

A major objective of war finance, already noted, was to derive the largest possible amount of war funds from current income and from savings and to depend as little as possible on the creation of bank credit to supply the Treasury with funds. In order to assure minimum recourse to bank credit, all the psychological pyrotechnics of modern advertising and sales promotion would be used to persuade the public to buy government bonds. Another important objective of the Reserve System and the Treasury was to maintain the structure of interest rates at approximately the levels existing at the beginning of the war.

In furtherance of these aims the Reserve System undertook to

supply banks with additional reserve funds after those available at the beginning had been utilized. Large-scale purchases of government securities by the Reserve Banks were made almost continuously as the occasion demanded in response to the need for support by one or another of the government bond issues, and they were made in order to provide the banks' growing need for required reserves as deposits increased and the public demand for currency increased.

Toward the end of 1942 reserve requirements in central reserve city banks were reduced from 26 to 20 percent. This step was undertaken in order to maintain adequate reserves in the New York and Chicago banks since these banks were losing reserves to other regions as government funds raised in disproportionate part in New York and Chicago were spent in other parts of the country in payment of war contracts. By reducing reserve requirements for reserve city banks their excess reserves were increased thereby encouraging further purchases of government issues by these banks.

Discount rates on collateral notes from member banks secured by United States Government securities and other eligible paper were reduced to 1 percent by those Reserve banks which had higher rates in force. In October 1942 the preferential rate of $\frac{1}{2}$ percent was established on advances to member banks secured by Treasury obligations maturing within 1 year.

In order to prevent yields on government securities from rising above the pattern agreed upon with the Treasury, the Reserve authorities utilized open-market purchases on a vast scale. The Reserve banks established a fixed buying rate of $\frac{3}{8}$ percent, at which rate they would buy all Treasury bills offered by the market. To make it even more convenient for the banks to buy bills, the Reserve banks agreed to resell any of these bills on demand at a fixed rate. Thus, Treasury bills were in effect converted into interest-bearing excess reserves. Banks were encouraged not to hold excess reserves but instead to let the Treasury have use of the money with the understanding that the bills could be passed on to the Reserve banks when, as, and if the banks needed to augment their reserve accounts.

The bill repurchase program together with support for other government securities made the short-term Treasury obligations less attractive than the longer-term issues. The result was a practice that came to be known as "playing the pattern of rates." A purchaser of a $\frac{7}{8}$ -percent certificate, for example, could sell it at a premium when it came within 3 months of maturity because its coupon rate was $\frac{7}{8}$ percent while the fixed rate on 3-month paper was only $\frac{5}{8}$ percent. Thus, the purchaser of the certificate after holding it for 6 months could sell it and obtain a substantial bonus. As long as the

fixed pattern of rates was maintained by the Reserve System, market forces did not iron out such discrepancies. Playing the pattern of rates resulted in more securities being purchased by banks than would otherwise have been the case.

As long as the Treasury and the Reserve System announced that they would prevent any movement from the established pattern of rates, a long-term security was just as liquid as a short-term security. However, the longer-term issues carried higher yields. Thus, early in the war the investors' preference for longer-term issues became clear. The result was that the short-term issues were ultimately sold to the Reserve banks, and with the added reserves greater bidding for the long-term issues became pronounced.

Congress aided the Treasury in its financing operations by three specific acts. Early in 1942 the Reserve Act was amended to permit the Treasury to sell its obligations directly to the Reserve banks. In 1943 war loan deposits (credits given to the government on the books of banks in payment for war loans) were exempted from reserve requirements and from deposit insurance assessments. The original intent of this provision was to make the banks more willing to buy government securities when this was desired. When the banks purchased government debt for their own account, they transferred the deposits to the Treasury account which was exempt from reserve requirements. Moreover, when a bank's customers bought government securities and paid for them by transferring their deposits to the deposit account of the Treasury, the amounts were exempted from reserve requirements. Thus, required reserves were released during the war loan drives, and the banks used these excess reserves to purchase government securities or to make loans to customers who wished to buy government debt. Between war loan drives when the government deposits were withdrawn to pay for war contracts, the deposits of private citizens and business firms increased, thus requiring additional reserves. The banks sold securities to the Reserve banks to augment their reserve accounts. The result was bank credit increased both during and between war loan drives. Finally, in 1945 when the Reserve banks' gold-certificate reserve had fallen sharply and was approaching the legal limit, Congress reduced the gold-certificate requirement of the Reserve banks from 40 to 25 percent. This reduction in central bank reserve requirements permitted the banks to increase their liabilities on the basis of their existing gold-certificate reserves.

The only significant efforts made by the Federal Reserve System to counteract inflationary pressures were in the area of selective

credit controls. Regulation of loans to carry securities were tightened with margin requirements eventually reaching 100 percent. Control over consumer credit was broadened, and the terms of installment purchases drastically restricted. There is no doubt that these measures, applied during a period of rising security prices and contracting supplies of durable goods, played a part in reducing the price pressures in these areas. They must, however, be regarded as supplemental and a weak substitute for high taxes and control over the money stock.

The expansionary monetary policy pursued during the war is evident in Table 62.

TABLE 62

ECONOMIC AND MONETARY EFFECTS OF WORLD WAR II

(In billions of dollars)

	Before the war, December 1939	At end of war, December 1945
Federal debt	48 ^a	279 ^a
Other debt	161	185
Federal Reserve bank credit	3	25
Member and nonmember bank credit:		
United States Government securities	19	101
Other loans and investments	31	39
Total	50	140
Bank deposits:		
United States Government	1	25
Other than United States Government	57	124
Currency outside banks	6	26
Liquid assets ^b held by public ^c	69	228
Gross national product (annual totals)	91	213
Wholesale prices (1939 = 100)	100	135
Cost of living (1939 = 100)	100	130

SOURCE: E. A. Goldenweiser, *American Monetary Policy* (New York, 1951), p. 197.

^a To obtain net debt deduct United States Government deposits shown below.

^b Deposits and United States Government securities.

^c Outside of Treasury, Federal Reserve, and other banks.

The monetary stock increased sharply. Deficit financing by the federal government and the banking system's purchases of govern-

ment securities were the driving force behind monetary expansion. Bank reserves to enable banks to purchase government debt were supplied liberally by the Reserve banks. Liquid assets held by the public were trebled. Price increases over the period were surprisingly moderate although deterioration in quality of products, and black-market prices are not portrayed by the price indexes.

■ POSTWAR INFLATION: 1946-1949

With the successful conclusion of the war the major economic problem of the United States was the reconversion of the economy to production of civilian output. In view of the oft-expressed fears of a postwar depression, various measures designed to encourage production were undertaken in the summer of 1945. Manpower and wages were released from effective control; most industrial production was freed from War Production Board controls. The Revenue Act of 1945 eliminated the excess-profits tax and reduced corporate normal and personal income taxes. Price controls were not substantially removed until the summer of 1946.

The reconversion of industry from war to peace proceeded in an unexpectedly smooth fashion without the substantial unemployment that had been feared. In 1946 as many civilian goods began to reappear and price controls were terminated, the economy entered into a boom of very large proportions. The consumer price index rose sharply and continued to rise to a peak in August 1948; the wholesale price index rose too, reaching a peak in September 1948. The index of industrial production rose to a peak in the latter months of 1948. The combined influences of rising prices and increased production resulted in a rise in gross national product from \$211 billion in 1946 to \$259 billion in 1948. During 1949 the upward course of economic activity was reversed temporarily. The consumer price index as well as the wholesale price index declined; industrial production fell during the first half of the year; the gross national product was somewhat lower than in the preceding year.

TREASURY FISCAL POLICY

At the end of the war the Treasury was in a strong position to pursue anti-inflationary policies by utilizing the \$25 billion of cash balances available in the general fund. These funds represented for the most part unused receipts from the final Victory Loan Drive. Had these funds been used to retire federal indebted-

ness held by the Reserve banks the banking system would have been under tremendous pressure to reduce the stock of money.⁴

During 1946 most of the Treasury's cash balance was used to retire federal indebtedness; by the end of 1946 the federal debt was reduced from \$279 billion to \$260 billion. The bulk of government debt that was retired was held by the commercial banks. The issues purchased from the banks were mainly bills and certificates. Commenting on debt retirement in 1946, the Board of Governors stated "Retirement of securities held by nonbank holders resulted in a shift of deposits from Treasury war loan accounts, against which no reserves were required to be held, to other accounts, against which reserves were required, and thus increased the reserve needs of banks. Retirement of bank-held debt reduced Treasury deposits at banks and bank holdings of short-term securities by corresponding amounts and had no effect on the reserve position."⁵

As long as the bulk of debt retirements were mere bookkeeping transactions on the books of the commercial banks, the effect was to cancel out assets against liabilities with no effect upon either required or excess reserves. The debt retirement program took up a large volume of the banks' secondary reserve. Any reduction in primary reserves was made good by the banks' sales of government securities to the Reserve banks at the support price. During 1946 the Treasury reduced the federal debt held by the Reserve banks by some \$4.5 billion; the deflationary effects of this operation were largely offset by \$3.5 billion of government bonds purchased by the Reserve banks in their bond-support program.

During 1947 and 1948 the Treasury continued its debt-retirement program. Unlike the earlier period, debt retirement was financed largely from a current budgetary surplus. The cash surplus deprived the community of disposable income to finance its purchases of current output. Beginning in 1947, the Treasury confined its retirements largely to Federal Reserve holdings of maturing certificates and Treasury bills. This policy resulted in a drain on bank reserves (and insofar as commercial bank holdings were retired, resulted in a

⁴ The mechanics of this operation would be as follows. Withdrawals of war loan accounts from commercial banks would be used by the Treasury to retire government securities held by the Reserve banks. Thus the asset government securities on the books of the Reserve banks would fall. At the same time the Reserve banks would debit the reserve accounts of the member banks in collecting the checks drawn on the member banks by the Treasury. Thus, on the books of the Reserve banks assets (government securities) and liabilities (due to member banks' reserve accounts) would be decreased. The decline in reserves would force member banks to decrease liabilities by calling their loans.

⁵ *Annual Report* (1946), pp. 2-3.

reduction in bank liquidity). While the retirement of debt held by the Reserve banks was sizable and adversely affected the reserve position of the member banks, contrary forces were at work which replenished the reserve accounts of the banks. Heavy purchase by Reserve banks in maintaining the bond-support program, an influx of gold, and a reduction in currency in circulation more than offset the reduction in bank reserves resulting from the debt retirement program. The return of a cash deficit eliminated the possibility of debt retirement by the Treasury in 1949.

FEDERAL RESERVE POLICY

The Treasury's preoccupation with the maintenance of low interest rates on its debt severely limited the scope of the Reserve System's anti-inflationary activities. In point of fact, the Reserve authorities favored low interest rates too. In 1945 the Board stated it "does not favor a higher level of interest rates than the Government is now paying."⁶

Despite the expressed desire to maintain interest rates on both short- and long-term government debt at the unprecedentedly low wartime levels, the authorities were not entirely successful. Because of heavy sales of short-term issues and large-scale purchases of the longer issues, yields on long-term issues declined throughout 1945 and the early part of 1946. In the spring of 1946 the Reserve banks eliminated the preferential discount rate of $\frac{1}{2}$ percent on advances to member banks secured by government obligations maturing or callable within 1 year. Since member bank indebtedness was small, this step had merely symbolic significance as a step in the direction of prewar conditions. During the balance of the year all interest rates increased, although they remained lower than they had been in 1945.

In 1947 inflationary forces continued to dominate the nation's economic activity. Some modification of the interest rate pattern became imperative, with the recognition on the part of the Board and the Treasury that the differential in yield between the long-term and short-term rate could only lead to extensive shifting by commercial banks from bills and certificates into longer maturities. In its 1946 *Annual Report* (p. 5) the Board argued: "The tendency for banks to sell short-term securities to the Reserve System and purchase longer term issues may recur at any time. The inducements for such shifts could be diminished by a narrowing of the margin

⁶ *Annual Report* (1945), p. 4.

between short-term and long-term rates on market issues of securities."

In July 1947 the Reserve authorities and the Treasury agreed upon a policy of permitting rates on short-term securities to rise. The System discontinued its buying rate which had been fixed at $\frac{7}{8}$ percent since 1942. The bill rate rose to 1 percent and the rate on certificates rose steadily to $1\frac{1}{4}$ percent in October 1948. The rise in short-term rates was effective in encouraging banks to increase their holdings of short-term securities. Thus, within the limitation imposed by the pegged long-term rate, short-term interest rates were allowed to find their market level.

Long-term rates continued to be under the influence of the "peg." In June 1945 the Federal Reserve banks held but \$1 billion of Treasury bonds out of total holdings of \$22 billion of governments. By the middle of 1947 Reserve bank holdings had been reduced to about \$700 million with no substantial change in total holdings of governments. With the increase in short-term rates, pressure developed on the medium- and longer-term maturities. The short-term obligations became more attractive to banks, and at the same time nonbank institutional investors found substitute investments in the private capital market. These investments provided considerably more return than did Treasury obligations. Under the pressure of sales government bond prices fell and interest rates rose. As a consequence, the Federal Reserve banks found it necessary to support the long-term securities in the fall of 1947. Bonds were purchased actively at over a point above par for the longest term $2\frac{1}{2}$ -percent issue, and toward the end of the year the support price was lowered to 100 $\frac{1}{4}$. It was stated immediately, however, that the Federal Reserve System "will now buy bonds aggressively, in such amounts as might be necessary to clear the market."¹ During the last half of 1947 and the first quarter of 1948, the Federal Reserve banks increased their holdings of bonds by about \$5 billion, while at the same time they reduced their holdings of bills and certificates by approximately the same amount.

The continued support of the bond market meant that the Federal Reserve System was deprived of its principal weapon to control inflation. Open-market operations could not be used to combat inflation, and the support of the bond market also rendered the discount rate ineffective.

Despite the expansive effects of the support program, the Board exercised some of its powers to limit the effect of such purchases

¹ *Monthly Review* (Federal Reserve Bank of New York, January 1948).

upon bank credit expansion. Higher short-term rates were designed to encourage banks and others to purchase short-term securities from the Reserve banks. Increases in reserve requirements also provided a means of immobilizing the additional reserves created by the support program.

During the first half of 1948 the Board employed virtually all the remaining authority it had to increase reserve requirements. After February 26 reserve requirements against demand deposits were increased in central reserve city banks from 20 to 26 percent; in reserve city banks there was an increase from 20 to 22 percent; and in country banks from 14 to 16 percent. Reserves against time deposits were increased from 6 to 7½ percent. The inflow of gold plus the sale of government securities augmented the reserves of the member banks. Despite the increase in deposit liabilities and in reserve requirements the excess reserves of member banks rose. Thus, the increase in reserve requirements did not curtail the expansion in the stock of money; it merely led to a transfer of earning assets from member banks to the Reserve banks.

In the face of the dilemma raised by the support program, the Board urged passage of an effective tax program and encouragement of the sale of Treasury obligations to nonbank investors. In addition, it requested passage of a secondary reserve proposal which would permit the Board to exercise its traditional powers by divorcing the Treasury securities market from the private capital market.^a Thus, interest rates on nongovernment obligations would be allowed to rise as credit was tightened. As an alternative, it proposed that a straight increase in reserve requirements of 10 percent be made to apply to all banks including nonmember institutions. Finally, the Federal Reserve Board insisted on the readoption of qualitative credit controls on consumer credit which had expired in November 1947. Congress acted on these requests by granting the Board emergency power to raise reserve requirements an additional 4 percentage points and to reimpose consumer credit controls.

In the fall of 1948 it became increasingly apparent that a downturn in economic activity was in the making. In early 1949 prices fell further, bank loans were liquidated, production slackened and unemployment increased. Federal Reserve policy was reoriented to counteract the "recession." Reserve requirements were reduced four times; consumer credit control was relaxed before authority for its regulation expired; margin requirements were lowered. During the fall of 1948 a brisk demand for government securities enabled the

^a See Chapter 13.

Reserve banks to sell substantial holdings. The effect of these sales was to reduce member bank reserves in a downturn in economic activity. In the face of this action the Reserve System announced, in turn, that it would permit fluctuations in prices of government obligations and that purchases and sales would be made "with primary regard to the general business and credit situation." That this pronouncement did not mean abandonment of the support program was clear from the statement that "The policy of maintaining orderly conditions in the Government security market, and the confidence of investors in Government bonds will be continued."⁹

The over-all impression of monetary policy during the postwar years is complicated and confused. The Reserve System's support of the federal debt eliminated the effectiveness of the simple monetary control devices. Consideration for the interest rate on the federal debt became the major goal of monetary policy in fact, even if not so stated.

■ POST-KOREAN INFLATION

JUNE 1950-MARCH 1951

In early 1950 there were striking evidences of recovery from the inventory adjustment in 1949. Industrial production and employment increased, commodity prices moved up, and total spending was at record highs. By mid-1950 inflationary pressures had reappeared as the economy operated at close to normal capacity. Expansion was facilitated by the continuance of the easy-money policy which arose to counter the recession in 1949.

The Korean outbreak greatly accentuated the inflationary forces in the economy. A consumer-buying wave hit the country soon after the attack on Korea and reappeared around the end of 1950. Business scrambled for materials to build up inventories and to expand plant and equipment. The pace of government stock piling was accelerated. Labor obtained a substantial round of wage increases. The inevitable result of these forces was one of the sharpest rises in commodity prices that this country witnessed in the twentieth century. From June 1950 to March 1951 wholesale prices rose some 16 percent.

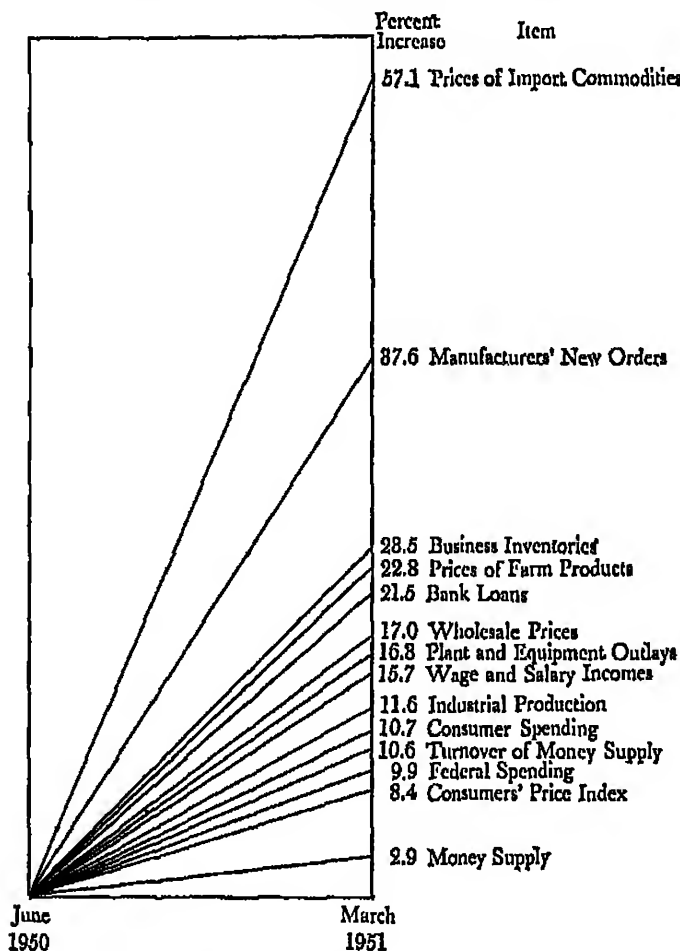
During this period the government accumulated a cash surplus of over \$7 billion. Therefore, the inflation cannot be attributed to government deficit financing. The forces making for price rises were mirrored in a rapid expansion of private credit as is seen in Figure

⁹ *Federal Reserve Bulletin* (July 1949), p. 776.

58. Total bank loans increased by over \$10 billion—one of the largest increases that has ever occurred in a period of comparable length.

FIGURE 58

SELECTED ECONOMIC FACTORS IN THE POST-KOREAN BOOM



SOURCE: U. S. Congress, Joint Committee on the Economic Report, the Patman Report, p. 12.

Consumer credit expanded, and real estate financing rose to all-time heights.

The immediate reaction of the Congress was to pass the Defense Production Act of 1950 to become effective in September. A comprehensive freeze of prices and wages was not undertaken until

January 1951. Two tax bills were passed in 1950; these acts substantially increased the tax collections of the Treasury.

During the period June 1950-March 1951, while prices were rising, some modest steps were taken toward the institution of a stronger monetary policy. In January 1951 the Board of Governors increased margin requirements from 50 to 75 percent. Under the terms of the Defense Production Act, the Board in September 1950 issued Regulation W imposing controls on installment credit. In October the Board issued Regulation X imposing selective controls on credit for the purchase of new housing. Under the terms of the Defense Production Act a Voluntary Credit Restraint program was initiated in March 1951. The Board of Governors, under authority delegated to them by the President, appointed a committee representing commercial banks, life insurance companies, investment bankers, mutual savings banks, and savings and loan associations. Although the program was under the sponsorship of the Board, it was entirely voluntary in character. The basic method of operation of the program was the establishment of broad criteria according to which lenders could screen loan applications and divert loans from nonessential to defense production.

In the field of traditional measures of general monetary controls, the Board was still suffering from the handicap of supporting the long-term government bond market. In August 1950 discount rates at all Reserve banks were increased from $1\frac{1}{2}$ to $1\frac{3}{4}$ percent. This action was taken despite objections from the Treasury which had earlier announced the issue of two refundings of 13-month certificates at $1\frac{1}{4}$ percent. This resulted in a strange situation. On the one hand, the System, desiring to tighten short-term rates, sold Treasury bills and notes at yields above the pattern set by the Treasury offering. On the other hand, the Reserve System supported the Treasury's refinancing operations by acquiring all called and maturing issues offered to it. Open-market operations were the largest on record. In six weeks the Reserve System purchased nearly \$8 billion of the called and maturing issues.

The difference of opinion between the Treasury and the Reserve System was publicized as an open breach in relations and led to uncertainty about interest rates in the financial markets. At the same time institutional investors confronted with continuing large demands for funds sold off their long-term government holdings. The Reserve System supported the long-term market while permitting short-term rates to rise gradually. In November the Treasury accepted the rise in short-term rates and announced an exchange offer for the year-end financing at rates reasonably close to those prevail-

ing in the money market at the time. Thus, by the end of 1950 short-term money rates were at levels higher than at any time since the early 1930's.

Just before the close of the year the Reserve authorities announced increases in reserve requirements to become effective in January and February 1951. Reserve requirements were thereby brought to the statutory limit except for requirements on demand deposits in New York and Chicago banks. The Board's action increased required reserves by about \$2 billion.

While the System's action was confined principally to increases in short-term rates, yields on long-term government bonds advanced too. The Reserve authorities continued to press for a rise in long-term yields. The Treasury officials expressed public dissatisfaction with a termination of the bond-support program. On March 4, 1951, a joint Treasury-Reserve System statement announced an "accord" as follows: "The Treasury and the Federal Reserve System have reached full accord with respect to debt-management and monetary policies to be pursued in furthering their common purpose to assure the successful financing of the Government's requirements and, at the same time, to minimize monetization of the public debt."

This was accompanied by an announcement that a nonmarketable $2\frac{3}{4}$ -percent bond would be offered in exchange for the longest Treasury bonds, the bank-ineligible $2\frac{1}{2}$ -percent bonds of 1967-1972. The exchange offer was designed to take these marketable bonds out of the market and thus to reduce the support problems of the Federal Reserve System. The terms of the "accord" announced on March 4, 1951, gave grounds for further uncertainty as to the future of support operations. Many investors with outstanding commitments were interested in shortening their government portfolios. As a consequence, both the Federal Reserve banks and the government investment accounts were forced to purchase substantial amounts of long-term bonds in order to hold them at par.

On March 12, 1951, the Federal Reserve dropped the support price on long-term government bonds, and for the first time since 1937 long-terms were quoted below par. The change in credit policy had repercussions in the private sector of the capital market where corporate bond yields rose.

The substantial inflationary pressure between June 1950 and March 1951 occurred during a period of strong fiscal policy characterized by a substantial Treasury cash surplus. Weak monetary policy was one of the major elements underlying the inflation. As is evident in Table 63, reserves available for expansion in the banking system increased by a net amount of \$1.1 billion. The \$4.8 bil-

TABLE 63

INCREASE IN RESERVES AVAILABLE FOR EXPANSION IN THE BANKING SYSTEM, JUNE 30, 1950, TO MARCH 28, 1951

(Billions of dollars)

Increase in government security holdings of the Federal Reserve banks	+4.8
Increase in all other Federal Reserve credit	+0.9
Decrease in monetary gold stock	-2.4
Decrease in money in circulation	+0.1
Other factors, net	+0.2
Increase in member bank reserve balances	+3.1
Less: Increase in required reserves due to increases in reserve requirements	-2.0
Increase during period in reserves available for expansion	+1.1

NOTE: Direction of change of individual items indicated in words; "plus" and "minus" signs indicate effect on member bank reserve balances available for credit expansion. Detail may not add to totals because of rounding.

SOURCE: Board of Governors of the Federal Reserve System, reproduced in Patman Report, p. 16.

lion increase in reserves stemming from Reserve banks' open-market purchases were offset by an outflow of gold as well as by a \$2 billion increase in reserve requirements. The rough equality in the percentage increase in prices and bank loans raises serious question as to the extent to which a stronger monetary policy would have averted a substantial amount of price inflation which occurred in the period.

QUESTIONS AND PROBLEMS

1. a. Contrast Federal Reserve policy during World War I and World War II, both as to objectives and techniques followed.
b. Wherein do you think the later period was influenced by lessons learned during the earlier period?
2. From the table in the *Federal Reserve Bulletin* entitled "Member Bank Reserves, Reserve Bank Credit, and Related Items" tabulate the changes in the various factors influencing member bank reserve balances between December 31, 1941, and December 31, 1945.
a. Indicate which factors increased and which decreased member bank reserves, and explain how each factor operated.
b. Characterize Federal Reserve policy during the war period as a whole, and illustrate by reference to Figures 26, 56, and 57.

3. "Along with this determination [when the United States became a belligerent in 1941] to maintain the 2½ percent rate on long-term bonds, a policy was adopted of maintaining the existing pattern of rates, perpetuating the extraordinarily wide range between short- and long-term money rates which had emerged from depression conditions. . . . What the government was powerless to do indefinitely was to maintain a predetermined spread between the rates on short- and on long-term money. Yet this is just what the authorities attempted to do." (E. A. Goldenweiser, *Monetary Management*, New York, 1949, pp. 65-66.)
 - a. By what means did the government seek to enforce this decision?
 - b. Evaluate the criticism.
4. From the table in the *Federal Reserve Bulletin* entitled "Member Bank Reserves, Reserve Bank Credit, and Related Items" tabulate the changes in the various factors influencing member bank reserve balances, between December 31, 1945, and December 31, 1952.
 - a. Indicate which factors increased and which decreased member bank reserves, and explain how each factor operated.
 - b. Characterize Federal Reserve policy during the postwar period as a whole, and illustrate by reference to Figures 26, 56 and 57.
5. At the close of World War II "the Great Depression was vividly remembered and many people in official positions feared that widespread unemployment would again emerge." There was also "the new stress on maintaining 'full employment.'" (L. V. Chandler, *Inflation in the United States, 1940-1948*, New York, 1951, p. 302.)
 - a. What effect did this have on Federal Reserve policy?
 - b. What other factors influenced Federal Reserve policy and how?
 - c. What was the practical effect of these policies?
6. For the end of 1941, 1945, and 1952 tabulate from the *Federal Reserve Bulletin* the following data for the insured commercial banks: total loans, total United States Government obligations, total other securities (including municipal obligations), United States Government demand deposits, time deposits, and total capital accounts.
 - a. Tabulate the changes in each item for each of the two periods, and arrange them in a table listing those which tend to increase and those which tend to decrease the money stock, together with the net effect during each period.
 - b. In the light of your tabulation, contrast the basis of the inflation in each of the two periods.
7. "In the field of public debt management and credit policy, the year 1951 ranks as the most eventful in recent history. The Federal Reserve authorities ceased to support the government bond market at fixed prices and adopted a more flexible policy. There was a general adjustment of bond yields and money rates to substantially higher levels." (Bankers Trust Company, *United States Securities and the Money Market*, p. 1.)
 - a. Trace the steps by which rates on Treasury obligations, both short-

and long-term, were permitted to seek their own levels after World War II.

- b. Indicate the reasoning underlying the decision to cease supporting the government bond market.
 - c. Indicate the consequences and implications of the decision on the United States economy.
8. In its report in 1952, the Subcommittee on General Credit Control and Debt Management of the Joint Committee on the Economic Report, stated:

"The Subcommittee, therefore, rejects the idea that the Federal Reserve System should be independent of the Government. . . . The formal independence of the Board of Governors from the President is inevitably limited by the hard fact that fiscal and monetary policy must be coordinated with each other and with the other policies and objectives of the Government if the Government is to be of the greatest service to the Nation. . . . What is needed is not the best *monetary* policy or the best *fiscal* policy, each as ends in themselves, but the best over-all *economic* policy. . . . The Subcommittee is inclined to believe that a degree of independence of the Board of Governors about equal to that now enjoyed is desirable. . . . The Board of Governors, like all other parts of Government, must play as part of a team, not as an outside umpire, and must ultimately abide by the decisions that are made by Congress." [pp. 51-53]

In his statement of views, Senator Paul H. Douglas (p. 73) maintained that it was

"... urgently necessary that the Federal Reserve System, if it is to have its present or increased monetary powers, must also have (a) an independence clearly sufficient to prevent its coercion, of course, by any private interest or, what is equally important, by the Executive Branch of Government, (b) its monetary responsibilities sufficiently fixed in law, and sufficiently differentiated from those of other agencies of Government that the monetary responsibilities of the System are clear to other agencies, to the public, to Congress, and to itself; and (c) the principles of its action also sufficiently fixed in law that they will be known to the Executive, the Congress, the public, and, above all and most important, to the Federal Reserve System."

Evaluate the opposing positions in the light of postwar monetary developments and the relation of the Treasury and the Federal Reserve System to the inflation which developed.

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PART **VII**

**FINANCIAL
INSTITUTIONS**

CHAPTER 27

Financial Institutions and the Flow of Saving into Investment

IN OUR discussion of saving and investment in Chapter 19, we pointed out that realized (ex-post) saving must be equal to realized (ex-post) investment. It will be recalled that their identity follows from the double-entry system employed in national income accounting. There is no need, however, for planned (ex-ante) saving to equal planned (ex-ante) investment since decisions to save are made largely by one group and decisions to invest are made for the most part by others. If planned saving exceeds planned investment, national income will decline; conversely, if planned investment exceeds planned saving, national income will expand.¹

Saving is the difference between income and consumption. Taken by itself the act of saving represents a withdrawal from the income stream; it reduces the immediate demand for current output of goods and services whose production gave rise to income. If a decline in income is to be averted, it is necessary that a demand exist for output produced equal to the amount of saving which occurs. The demand for product beyond what is spent for consumption is called investment. Investment by itself tends to increase the demand for

¹ Real national income will increase to the extent that idle productive resources exist. In the event unutilized resources do not exist national income in money terms may increase.

current output and thus national income. It is important to remember that investment restores to the economy the income which is withdrawn by the act of saving. Hence, investment is the necessary complement to saving, and saving must be translated into investment if the economy is to continue to maintain high levels of income and employment.

■ SOURCES AND USES OF SAVINGS

Private saving occurs in two ways: (1) individuals, including unincorporated businesses, trust funds, foundations, and endowments choose to consume less than their current income and (2) corporations pay out less in dividends in any period than they make in net profits.²

The chief normal use of saving in a private-enterprise system is to increase the stock of economic goods or wealth of the economy. A second possible outlet for saving is through net increases in the debt of government regardless of the extent to which the government is increasing its holdings of economic goods. The third disposition of saving is through net acquisition of foreign securities and economic goods located abroad.

Increases in government debt or foreign investment may at times be important in providing outlets for saving. Historically, private domestic capital formation has provided most of the necessary offsets to saving. We shall confine our discussion to the manner in which private saving flows into private investment.

The principal forms of private investment are increases in fixed and working capital employed in business enterprises. Also important is purchase of new housing by individuals. Saving may be made available for private investment in a variety of ways. To some extent the savers and those engaging in real investment are identical. Thus, corporations may and often do use their retained earnings to add to their holdings of fixed and working capital. Individuals—mainly unincorporated businesses and farmers—may likewise use their saving to build up their capital goods as when the proprietor adds to his plant, equipment, and inventories or when the farmer employs his saving to finance improvements on his farm. Individuals may also use their saving to finance the building of new homes.

To the extent that savers engage in real capital formation, the

² Corporate saving as defined here is net corporate saving. If depreciation allowances are added to net corporate saving, the resultant figure yields gross corporate saving. The corresponding outlet for gross saving would be gross investment. In this chapter we shall confine our attention to net corporate saving and net investment.

act of saving also is accompanied by investment, and there is no problem of maintaining adequate demand as a result of the saving. A large proportion of saving in the economy, however, is made by persons who do not engage in an amount of capital formation equal to their saving. If income is to be maintained, it is important that the saving not used directly by the saver for capital formation must be made available to others—mainly business firms—who use the funds to engage in real investment.

■ THE MACHINERY FOR TRANSLATING SAVING INTO INVESTMENT

The saver who does not utilize all his saving in capital formation directly may make the excess available to business enterprises through the market for corporate securities by lending money to or by buying shares of stock in the firms which engage in capital formation. Alternatively, the saver may place his funds in financial institutions (such as savings banks and life insurance companies). These financial institutions act as intermediaries and can in turn transfer the saving to business enterprises and others who use the funds to engage in capital formation.

The financial institutions with which the saver may place his funds perform a service that may be described as securities substitution. They make available to savers their own securities which are acceptable to the savers and suitable for their needs, and they place the funds so received in other securities. They, so to speak, substitute their own securities which savers desire for other securities which lack appeal to those savers. A corollary is that the institutions manage the portfolio of securities that they hold, shifting them about as their judgment dictates. Investing institutions, such as savings banks and investment companies, are formed to invest other people's funds, while institutional investors such as insurance companies are formed primarily for purposes other than investment, but in the course of their activities acquire substantial funds which they must put to work.

Unless the saver on the basis of personal contact either directly makes funds available to others for capital formation or engages in real investment himself or else places his saving with a financial institution as intermediary, he must make use of a marketing institution in order to acquire the securities issued by enterprises that engage in capital formation. Investment bankers basically act as merchants who acquire securities from issuing corporations and

governmental bodies and place these securities with savers who are seeking outlets for their funds. Although, as explained in Chapter 28, financial institutions to a growing extent make direct contact with enterprises engaging in real investment and supply them with funds, even these financial institutions use the marketing institutions in supplying funds to those engaged in capital formation.

Besides investment bankers, the marketing institutions include stock brokers and security dealers. They operate both as members of organized stock exchanges and in the unorganized over-the-counter markets. For the most part, stock brokers and security dealers do not make funds directly available for capital formation, since they engage in transactions in securities which are already outstanding. Hence, they do not provide those engaged in capital formation with additional funds. Instead, they transfer the ownership of securities that have already been issued and thus give such securities in varying degrees the quality of near money. Nevertheless, by providing a market for already outstanding securities the brokers and dealers supply greater marketability to securities and hence encourage people to acquire them. This facilitates the flotation and sale of new issues to finance capital formation.

Capital formation in real estate and agriculture has developed specialized financial machinery that has grown up largely, though not entirely, apart from that developed to finance general business and industry. It has included facilities to meet short-term as well as long-term needs. The machinery which is found in these fields is organized in substantial degree along cooperative lines and also under the auspices of the federal government. This is evident from the role played by the Federal Home Loan Bank System and the Federal Housing Administration in urban finance and by the Farm Credit Administration in rural finance. Consumer credit, too, is provided largely, though not entirely, with specialized financial machinery. But all the specialized financial machinery, whether to provide real estate or consumer credit, makes extensive use of the facilities provided by the marketing and intermediary institutions as a means of tapping sources of funds and aiding in translating saving into real investment and thereby assisting in capital formation.

CHAPTER 28

The Securities Markets

OUR present economic society is characterized by large-scale production for a market. No small part of this productive efficiency and the high standard of living that it makes possible is attributable to extensive mechanization and division of labor or specialization. Extensive mechanization (and the enhanced division of labor which it facilitates) depends upon the willingness of the community to refrain from consuming the entire current output of the economy and the decision to utilize the resources freed by saving to add to the stock of producers goods and inventory. Without the saving and the machinery to effect it as well as to distribute it, capital formation could not take place on the vast scale present in our modern economic system.

Growth in the scale of enterprise serves to limit the individual's opportunity to invest directly in his own business and has encouraged utilization of savings in indirect investment in businesses run by others. In a private enterprise economy the corporate form of business organization, with its numerous types of security issues, facilitates raising the huge quantities of capital that are needed.

One aspect of the extensive specialization in our modern economic society is the need for specialized machinery to facilitate indirect investment by bringing together the sources and users of funds. This machinery—called the securities markets—enables the placement of corporates and government securities in the hands of those who have funds to invest. The use of intermediaries to perform the financial function relieves businessmen of the necessity of being financiers. The machinery is vital to capital formation today, be-

cause it helps translate money savings into real investment such as plants and equipment without which economic progress cannot be maintained. By doing so, it stimulates both saving and investment.

The securities markets have two closely related sectors: one pertains to new issues and the other to securities already outstanding. This chapter is devoted to a discussion of both sectors of the securities markets.

New corporate securities are issued by existing, as well as by newly formed enterprises. Many corporations find that they cannot get enough funds to expand their operations from reinvesting earnings and reserves for depreciation and from offering additional securities to their own shareholders. Frequently, too, they wish to replace existing issues by new securities at maturity or, if callable, before the securities fall due. The *investment banker* is an intermediary between the issuer of securities and the investing public. He is basically a merchant whose primary function is to buy entire issues of securities and to distribute them to institutional and individual investors. A secondary function is to distribute large blocks of existing securities to the investing public on behalf of present holders who wish to dispose of their holdings.

Investment banking involves essentially long-term commitments of funds by security purchasers. It needs a secondary market in which owners of limited amounts of existing securities can dispose of them, recalling their investment and converting the securities into cash. The *stockbroker* and the *over-the-counter broker* or *dealer* are primarily concerned with shifting the ownership of securities by replacing one holder with another. They help mobilize savings for the needs of business and the government.

The economic function of the securities markets is to translate savings into investment and thus to facilitate capital formation. The flow of real resources is directed into capital formation, in part indirectly, by setting relative rates of return on different classes of securities and different industries and issuers. Thus, the security markets influence the direction of the flow of funds into the various productive activities. In addition, the securities markets affect the size of the money stock because commercial banking provides security collateral loans to investment bankers, speculators, and others. Finally, the marketability given securities has provided a principal source of the "near money" which bulks so large in discussions of monetary policy today. Thus, the securities markets constitute an important segment of our financial structure, intimately related to other financial institutions. Without their smooth functioning the work of these other institutions would, at best, be badly performed.

■ THE INVESTMENT BANKER

Today investment banking is conducted largely by independent houses, organized either as partnerships or general business corporations; some act also as stockbrokers. For the quarter century prior to 1933—but especially during the 1920's—commercial banks and trust companies had increasingly entered investment banking, either through bond departments or securities affiliates. In 1929, 591 banks were engaged in the securities business and originated slightly less than half of all bond issues. During the lean years following the security market collapse of 1929, these institutions gradually abandoned the field. The Banking Act of 1933 restricted them to underwriting government securities, forbade operation of affiliates for the distribution of securities, and forbade investment houses to receive deposits. Today only a limited number of large banks deal actively in government bonds.

Basically investment bankers are merchandisers who buy issues at wholesale and distribute them at retail. A bird's-eye view of the classes of securities handled is given in Table 64 and Figure 59. According to their specific activities, investment bankers fall into three main groups. *Originators* arrange to purchase or underwrite new issues. They are associated with *wholesalers*, who are in part other originators and in part mere distributors of securities. Most wholesalers also engage in retailing, but there are many exclusive *retailers*.

OPERATIONS

The operations of the investment banker include (1) origination, or selection of risks; (2) underwriting, or assumption of the risk of nonsale of the issue on the terms arranged; and (3) sale, or actual distribution of the securities to investors.

Origination His strategic position between issuing corporation and investor makes the investment banker a potent factor in determining where savings are directed. Origination of new issues is a major economic function. Purchasing policies are the more important, because investors rely upon the banker's recommendations. This public confidence, in turn, is based on the record of his offerings. It is widely recognized that an issue well bought is half sold.

The extent of the banker's investigation varies with the class of issue. Those proposals which survive a quick preliminary survey are given careful study. The banker's buying department may enlist the

TABLE 64
NEW SECURITIES OFFERED FOR CASH IN THE UNITED STATES IN 1951
(000,000 omitted)

Total		\$21,265
Type of offering		
Public		17,809
Registered under the Act of 1933	\$ 3,927	
Unregistered	13,882	
Private		3,456
Type of issuer		
Corporate		7,741
New money	6,531	
Retirements	849	
Other purposes	226	
Cost of issue	135	
Noncorporate		13,524
U. S. Government	9,778	
State and municipal governments	3,189	
Other	557	
Type of security		
Common stock		1,213
Preferred stock		888
Bonds and notes		19,214
Corporate	5,691	
Noncorporate	13,523	

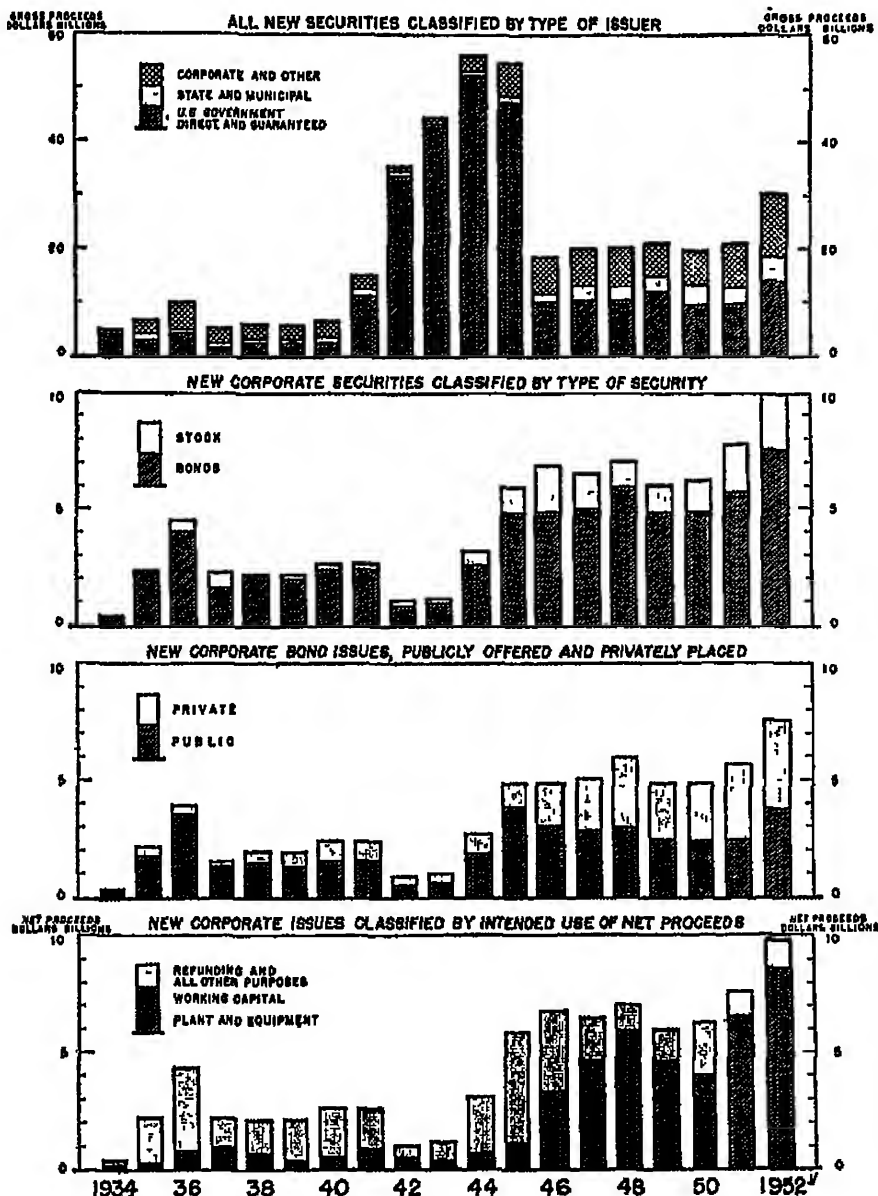
SOURCE: Securities and Exchange Commission, *Statistical Bulletin* (September, 1952), pp. 3, 5-7. Data cover substantially all new issues offered for cash sale in the United States in amounts over \$100,000 and with terms to maturity of more than one year. The figures represent offerings, not actual sales, but the proportion remaining unsold is believed small.

aid of outside engineers, accountants and attorneys. Often the proposals reach the banker because of pre-existing relations with issuers. Many issues, however, come to him from independent "finders" whose function is to bring together the issuing corporation and the investment banker; some issues are referred to the investment banker by commercial banks; other issues are presented directly by would-be borrowers. While issues have traditionally been originated by direct negotiation between banker and issuer, competitive bidding has

FIGURE 59

NEW SECURITIES OFFERED FOR CASH IN THE UNITED STATES

(By calendar year, 1934-1952)



¹ Preliminary figures estimated on basis of data through July 1952.

SOURCE: Securities and Exchange Commission.

assumed importance for certain types of securities and is now used for over half the total of nonfederal government issues.

Competitive bidding is firmly established in state and municipal financing where tax exemption, standardization, and financial stability render continuous connections between investment banker and security issuer of relatively minor importance. It is also used today for most railroad and public utility issues. Industrials, however, are almost entirely negotiated. The wisdom of competitive bidding has been widely debated. Advocates claim that it is more likely to obtain funds at lower cost; that it assures wider distribution of the securities; and that, by avoiding investment banker domination of issuers, it better serves the interests of investors. Opponents, however, contend that it destroys the banker's incentive to support the credit of an issuer; that excessive prices may sometimes be bid and result in ultimate loss to the banker and to the investor; that in depressed times no competitive bids may be forthcoming; that the establishment of permanent financial relationships cuts the cost of distribution; and that investigation is less comprehensive under competitive bidding. In practice, the number of bids placed for very small and very large issues tends to be quite small, and the SEC (the Securities and Exchange Commission) has at times had to exempt issues from its own ruling when it was clear that they could not be successfully marketed by competitive bidding.

Underwriting If the investigation proves favorable, one of two types of contracts is signed between the issuer and the underwriters. One type involves a firm commitment by the underwriters to purchase the entire issue outright for resale to the public. The firm contract, however, contains a "market-out" clause which permits the banker to cancel his contract if certain specified events arise. The second type of contract entails an undertaking without financial obligation by the underwriters to use their best efforts to sell the issue. This type of contract is used for very strong or very weak issues.¹

In investment banking, unlike other merchandising endeavors, the average unit transaction is large and large sums of money are required. Since it operates on a relatively narrow margin of gross profit and because security prices are highly sensitive, the risk in carrying inventories of securities is extraordinarily large. Therefore, the originating house ordinarily joins other houses in an underwriting or purchase syndicate, of which it acts as manager. An agree-

¹ In the five postwar years 1945-1949, 85 percent of all publicly offered securities were distributed by investment bankers. Of the 85 percent, 70 percent were handled by purchase and sale and 15 percent on a best efforts basis.

ment among the parties in the purchasing or underwriting syndicate defines the terms of the venture. Present practice generally limits the liability of each member to the amount of its participation. The manager is vested with broad powers. These include borrowing to carry the inventory of securities in process of sale and stabilizing the market price of the new issue by purchases and sales for syndicate account in order to facilitate distribution at the offering price. While permitted by the SEC, the desirability of the practice of stabilizing the market for a new issue has been widely debated. It is not needed for conspicuous successes, and because of the magnitude of the support required, it is impracticable for notable failures.

A special type of underwriting agreement is known as "stand-by" underwriting. It occurs most commonly when an established business offers additional stock direct to its own stockholders or when a corporation which is recapitalizing or reorganizing offers new securities in exchange for its outstanding issues. An underwriting group may be formed which for a commission guarantees the disposal of the entire issue. The group is obligated to take up any portion not absorbed or exchanged by existing holders, so that the issuer is certain to obtain the needed cash for corporate purposes or to pay off the nonassenting security holders. Because of the longer time involved, the risk to the investment banker is greater than in ordinary underwriting.

Sale The investment banker attempts to achieve rapid, profitable, wide, and permanent placement of the securities. The selling group is the principal vehicle for the actual distribution of new issues to investors. It is organized and managed by the manager of the underwriting syndicate, with which it usually enters into a contract. Participants in the selling group comprise some or all of the underwriters and additional dealers. They either receive the right to take a firm subscription on the offering date for a fixed amount, or subscriptions are made subject to allotment. In addition, other dealers may make purchases of the issue at a small concession from the public offering price. In current practice the selling group only handles that portion of a new issue not actually sold by members of the purchase group.

The public offering of a new security is generally made on the day after the registration statement becomes effective. No sale can be made unless the purchaser is given a prospectus. A preliminary "red-herring" form of this document is used to inform dealers and prospective purchasers during the 20-day waiting period between filing of the registration statement with the SEC and its effective date. During the waiting period a brief "identifying statement" giving

limited information about the security may be published in order to seek out persons sufficiently interested to request the prospectus. When the total issue has been subscribed for, the books on the offering are said to be closed. If the syndicate expires and is not extended before all the securities are sold, the unsold securities are distributed among the participants who are then free to sell at whatever price they see fit.

The cost to the issuing corporation of obtaining funds includes the bankers' "spread" (discount) and the expenses paid by the issuer himself. The bankers' spread covers charges for underwriting and distribution. Other expenses include engraving and printing, registration fees, taxes, legal, accounting, and engineering costs, and listing on an exchange if required. The discount for all securities effectively registered during the 5 years 1945-1949 inclusive was \$2.12 per \$100 of gross proceeds and other expenses were \$0.52 more, or \$2.64 in all. The discount ranged from \$0.78 for bonds to \$3.46 for preferred stock and \$8.47 for common stock. Total cost of flotation varied from \$1.80 for bonds to \$4.21 for preferred stock and \$9.61 for common stock. While varying in individual cases, it is probable that underwriting cost accounts for less than half and selling cost for more than half the total cost to the issuer of investment banking services. The higher costs for common stock reflect the facts that such issues are smaller in size and are sold to a greater extent on a best effort basis, requiring greater sales effort.

In recent years large and well-established issuers have frequently placed securities, chiefly bonds and preferred stock, with one or more institutional buyers, especially insurance companies. During each of the 4 years 1948-1951 inclusive, corporate bonds placed privately exceeded those publicly offered. *Private placements* were utilized particularly by industrials and public utilities. Arrangements are often made through a single investment banker, whose restricted service does not include underwriting and retail selling. For the borrower, private placement makes it easier to fit the financing program to his needs. It eliminates SEC registration with its 20-day waiting period, and the disclosures and liabilities, connected with registration with the SEC. Private placement also dispenses with the need for a corporate trustee qualified under the Trust Indenture Act. The practice of private placement eliminates many items of expense, although the purchaser of the security may attempt to share the saving with the issuing corporation by the price it sets on the purchase of the issue. However, the corporation is unable to retire its securities by purchase at a discount in the open market. Through private placement, institutional investors with their huge

inflow of funds in recent years can obtain large amounts of one issue without difficulty. The securities so acquired, however, lack marketability. In one sense, private placement severely restricts the scope of the public securities markets. The role of the investment banker is greatly reduced, and a large volume of better-grade issues is made unavailable for smaller financial institutions.

Incidental Services The investment banker also serves as financial adviser to corporations. His association with an issuer is likely to be continuing so that he may assist in subsequent refunding of an issue or further issues in connection with expansion of the issuer's business. He may give advice for a fee to corporations planning to market issues by competitive bidding as well as to those who plan to place issues privately.

The investment banker often becomes an adviser to his security-buying customers. He furnishes information on securities in which they are interested and helps them select securities meeting their particular requirements. Some investment bankers have undertaken investment management for a fee, formulating systematic and continuous programs to meet individual or institutional investment needs.

The investment banker is prepared to obtain any security which a customer may want to purchase, whether or not it is regularly handled by him. He also makes many sales by switching a customer out of an existing security and into a new issue. Thus, through his trading department he participates more or less actively in the over-the-counter market mentioned later in this chapter.

REGULATION OF SECURITIES SELLING

Despite earlier legislation abroad, it was not until 1911 that the first American state—Kansas—enacted a general law designed to protect investors against fraud. Today every state except Nevada has some kind of statute relating to the sale of securities. This legislation is of two principal types. "Blue-sky" laws require registration or licensing of dealers, brokers and other distributors or registration of securities. The great majority of "blue-sky" laws combine both features. Certain types of transactions and classes of issues are exempt from these statutes. In contrast, the "antifraud" statutes found in several states simply prescribe penalties for fraudulent sale of securities and provide for injunctions to protect the public from actual or threatened fraud.

State enforcement agencies proved unable to cope with fraudulent interstate transactions, and the United States Post Office did not

have the facilities for applying the statute which pertained to using the mails to defraud. The widespread public losses resulting from the sharp decline in prices in the securities markets after 1929, coupled with evidence of loose practices in these markets, led to a comprehensive plan of federal regulation in the Securities Act of 1933.

The chief purposes of the act are to provide full, fair, and accurate description of securities offered for sale in interstate commerce or through the mails and to prevent fraud in the sale of such securities. The underlying philosophy is that disclosure and publicity are the most effective of all regulatory devices, and that the most important safeguard for the investor is to make available to him all the facts necessary for the intelligent appraisal of the value of a security.

The Securities and Exchange Commission (SEC) administers the act. It is composed of five members appointed for 5-year terms by the President, subject to confirmation by the Senate. Certain types of securities are exempt from the provisions of the act. These include securities issued or guaranteed by federal, state, and municipal governments, by national and state banks and savings and loan associations, by common carriers, by nonprofit-making organizations and receivers, and short-term commercial paper. Small issues (under \$300,000) are exempt from registration though not from penalties for fraud, if, under SEC regulations, specified information has been submitted. Certain types of operations are also exempt. These include private (in contrast to public) offerings and those concerned with trading as contrasted with distribution of securities, such as brokerage transactions undertaken on unsolicited customers' orders, and exchange of securities in corporate reorganizations without payment of commissions.

The basic techniques of disclosure consist of filing a registration statement (in a form prescribed by the Commission) with the SEC and delivery of a prospectus to the prospective investor. The registration statement becomes effective after a "cooling-off" period of 20 days (or less if the SEC so authorizes) after which the securities can then be offered for sale. The waiting period affords the Commission and the public an opportunity to investigate the issue. In no case, however, does the SEC pass judgment on the soundness of the security. Amendments may be filed to the statement, or it may be withdrawn. The prospectus summarizes the more significant information contained in the registration statement, but the Commission's efforts to simplify it have achieved but limited success. Prior to the effective date of the registration statement, a preliminary or "red-herring" prospectus is distributed to convey information to all po-

tentially interested parties without actually offering the securities for sale and a brief "identifying" statement may be published.

Four principal types of sanctions supply the act with teeth:

1. *Stop orders.* Should the Commission believe that the registration statement contains any untrue statement or any misleading omission of a material fact, it may, after a hearing, enter a stop order suspending the statement's effectiveness.
2. *Injunctions.* Should the Commission believe that any person is engaged or about to engage in a violation of the act or the Commission's rules, it may ask the federal courts for an injunction.
3. *Criminal penalties.* The Commission may transmit evidence of a violation to the Attorney General who, at his discretion, may institute criminal proceedings. Those convicted of willful violation of the act or the Commission's rules, or willfully making an untrue statement or omission in a registration statement, may be fined not more than \$5,000 or imprisoned not more than 5 years, or may be both fined and imprisoned.
4. *Civil liabilities.* A purchaser unaware of false or misleading statements or omission of material facts in the registration statement at the time he purchased the security can sue any signer of the statement, any director at the time the statement was filed, any accountant, engineer, appraiser or other expert who prepared or certified part of the statement, and any underwriter. Individuals other than the issuer can escape liability by showing reasonable grounds, based on investigation or expert testimony, for believing that the statement was truthful. Damages may not exceed the price at which the security was offered to the public. Civil liabilities also arise in connection with unregistered nonexempt securities offered through the mails or in interstate commerce, failure to deliver a prospectus prior to the sale of registered securities, and sale of securities (whether or not registered or exempt) by a false or misleading prospectus or oral communication.

While protecting the purchaser of securities against fraud, the SEC has tried to simplify the processes of security distribution within the framework of the act. However, it remains difficult for the small enterprise to obtain capital, especially equity capital. Investors are reluctant to purchase such issues because they are less well known, less marketable, and more vulnerable to adverse factors. Such funds are not only difficult to raise but involve greatly increased cost to the issuer because of the increased costs entailed in distributing the

issues. It is especially true that the investment banking machinery is not geared to provide equity capital for new or small corporations. Various remedies have been proposed to finance small business and to provide equity capital. Some of these call for creation of special institutions to hold the issues of these new and/or small businesses and involve use of the securities substitution technique described in the following chapter.

■ THE STOCKBROKER

As already noted, the secondary market provides a means whereby the owners of existing securities can dispose of them. The market has two parts: (1) the organized stock exchanges which provide central market places for the purchase and sale of corporate stock and debt. Here bids and offers are coordinated through a well-developed trading technique, the double or two-sided auction, and (2) the off-board or unorganized over-the-counter markets in which prices are determined by negotiation.⁴ Through use of such rapid means of communication as the financial ticker, private wire services connecting branches of brokers with their head office, and the business and financial press, the market is nation-wide in scope. Table 65 indicates the form and organization and the locations of the concerns and branches registered with the SEC at mid-1951.

TABLE 65
BROKERS AND DEALERS REGISTERED UNDER SECTION 15 OF THE
SECURITIES EXCHANGE ACT OF 1934, AS OF JUNE 30, 1951

	Number of registrants				Number of branch offices
	Total	Sole proprietorships	Partnerships	Corporations	
New York City	1,145	329	598	218	955
Elsewhere	2,763	1,183	685	895	1,126
Total U. S.	3,908	1,512	1,283	1,113	2,081

SOURCE: Securities and Exchange Commission, *17th Annual Report*, Table 7, p. 200.

⁴ In its broadest sense the term, the over-the-counter market, includes distribution of new securities to investors through underwriting operations (already described) as well as the making of a market for securities that are already outstanding.

STOCK EXCHANGES

The New York Stock Exchange, prototype of other securities exchanges in the United States and Canada, is a voluntary unincorporated membership association. It provides facilities for its members and regulates their operations in an endeavor to safeguard both their interest and that of the general public. Dating back to 1792 as an outdoor market, it is the largest as well as the oldest of the sixteen national securities exchanges registered with the SEC and the four small local exempt exchanges. Over three fourths of the stock transactions, both in number of shares and market value, effected on securities exchanges, occur on the New York Stock Exchange.

The Board of Governors of the New York Stock Exchange is composed of thirty-three men whose terms of service are staggered in order to ensure consistency in policy. They represent various interests which include: active brokers and traders, partners of members ("allied" members, some from outside New York City), and prominent men selected to represent the general public. One of them is an elected nonsalaried chairman who presides over the board. Another, selected by the board, is the paid president, who acts as chief executive and oversees the various departments. The board regulates business conduct and assures fair-trading practices. Under the constitution of the Exchange expulsion from membership is mandatory for fraudulent conduct. Suspension or expulsion is the penalty for violation of the rules, conduct inconsistent with just and equitable principles of trade, fictitious transactions, activities designed to upset the equilibrium of the market, or making misstatements to Exchange officials. The penalty for conduct detrimental to the interest or welfare of the Exchange is suspension.

Total membership of the New York Stock Exchange is limited to 1,375. Beginning May 1, 1953, corporations whose main business is dealing in securities may also be members, instead of only individuals. After being approved by the Department on Members, the applicants purchase a "seat" from a present member or from the estate of a deceased one. Some 600 members of the Exchange are partners in commission houses devoting themselves to executing orders for purchase or sale of securities received from nonmember customers. They are the connecting link between the floor of the Exchange and the investing and trading public. In their offices are "registered representatives" who deal with customers. Many commission houses operate branches with which they keep in constant contact through leased telephone and telegraph facilities. Another 200 members act as *floor brokers* (known as \$2 brokers); they have no

direct contact with the public but execute orders on the floor for other brokers. *Floor traders* are free lances who transact business on the floor for their own account. They tend to broaden the market, making it more continuous and close, by absorbing a temporary excess of demand or supply. They were formerly more numerous, but regulation and taxes reducing the profitability of such activity have reduced their present number to about twenty. Some 330 *specialists* concentrate their activity on one or a few stocks at a single trading post on the floor; these specialists act as floor brokers and floor traders. As brokers, they receive from other brokers (chiefly commission houses) orders in issues unsuitable for immediate execution, such as an order to sell a share \$1 above the present market price. As traders, they buy and sell for their own account, subject to certain restrictions established by the Exchange and the SEC for the protection of outside customers. At any moment, their "book" (available only to officials of the Exchange) shows the prospective demand and supply for the stock or stocks in which they specialize. Their primary responsibility is that of fostering an orderly, continuous, and close market, absorbing a temporary excess of demand or supply.

The exchanges have found it more efficient and economical to conduct trading by limiting transactions to a certain number of shares (the unit of trading, usually 100 shares in active stocks) or multiples thereof. The handful of *odd-lot dealers* execute orders for other brokers for lesser amounts. They even up their position through purchase or sale of full lots when necessary. For his service in making a market and taking a position, the odd-lot dealer ordinarily sells at one eighth of a point above and buys at one eighth of a point below the price in the next round-lot transaction when an active stock sells below 40. The differential is one quarter of a point when the stock sells at or above 40. In recent years for every 100 shares sold in the round-lot market, somewhat less than 12 shares are handled in the odd-lot market. *Bond brokers* and *dealers* execute orders or trade in listed bonds on a separate portion of the floor in the so-called "bond crowd." The standard unit of trading is \$1,000. However, 90 percent of the business in bonds is conducted over the counter, and the volume traded on exchanges outside New York is insignificant.

At the close of 1951 there were listed on the New York Stock Exchange 441 preferred and 1,054 common stock issues of 1,075 issuers and 918 governmental and corporate bond issues of 381 issuers. All these issues had been listed by the issuers for trading with the Exchange after having been registered with the SEC. When originally listed, they had met requirements by the Department of Stock List, dealing with size and strength of issuer, earnings record,

adequate public distribution and trading interest, and minimum voting rights of preferred and common stockholders, and they had agreed to specified publicity about future operations. Unlisted trading privileges are granted by the American Stock Exchange (formerly the New York Curb) and the regional exchanges on application by a member of the exchange rather than the issuer, under approval of the SEC. They foster decentralization of trading. Some of the issues are listed and registered on other national exchanges and others have a registration statement on file with the SEC, to which periodic financial reports must be made.

Classes of Transactions Most patrons of stockbrokers are "bulls" who expect prices to rise. Their purchases are either outright (for cash) or on margin. The margin buyer puts up a certain fraction of the purchase price in order to protect the broker against loss. By doing so, he magnifies his gains at the risk of multiplying his losses. The balance of the purchase price is loaned by the broker to the customer. The buyer must keep the margin good by depositing additional cash or acceptable securities in the event of a decline in price below the minimum margin requirement. However, if the stock rises in price, he may make withdrawals.

The broker, in turn, finances his margin accounts from several sources. In addition to his own capital, a member of an organized stock exchange can use the "free cash" credit balances which his customers deposit with him to finance the margin purchases of other customers. More often, under a general loan agreement, which does not specify the amount of the loan, he obtains a demand or call loan from his own bank. This is renewed daily and secured by collateral consisting of diversified stocks and bonds carried for the customers. Those which have been sold are withdrawn as collateral and others which have been bought are substituted. A time loan by a bank to a broker is now rare.

The margin required by the bank of the broker must be distinguished from the margin required by the broker of his customer. So must the initial margin at the time the stock is bought from that subsequently maintained. As is indicated below, the Securities Act of 1934 empowered the Federal Reserve authorities to set initial margins on registered securities^a while the stock exchange fixes minimum margins that must be maintained in the account. The Federal Reserve authorities also regulate margins on loans to brokers and dealers, except when secured by customers' collateral. They also restrict indebtedness of brokers and dealers. In general, the former

^a The New York Stock Exchange also sets a minimum initial margin of \$500.

practice of narrow or "thin" margins (as low as 10 percent, but averaging roughly 20 percent) and prompt sale of the collateral when the speculator fails to restore a margin that has become impaired because the securities have declined in price, has been replaced. Now, "thick" margins are required, and further purchases are restricted when the account first becomes undermargined.

A "bear" believes that a stock will decline in price, hence sells it "short." A short sale of securities is a sale of securities which the seller does not intend to deliver from his own portfolio. In a true short sale the seller does not own the securities sold, while in a sale "against the box" he does own them but does not expect to deliver them at the time of sale. The short seller expects to realize his profit by buying the stock ("covering") in future at a lower price. Transactions on the stock exchange are customarily settled, however, on the third following full business day, and unlike the commodity exchanges, contracts calling for future delivery are rare. Hence the seller's broker, if he or his customers do not have the stock available, arranges to borrow it from other brokers, from investment companies or in the "loan crowd," and delivers this stock to the buyer. The lending broker is protected by the deposit with him of a sum (adjusted as the market price changes) equal to the market price of the borrowed shares, which the borrowing broker obtains from the short sale. Depending on the availability of stock for loan purposes, the lender may pay the borrower interest on the funds, the stock may loan "flat" (without charge by either party), or the lender may receive a premium. In order to protect his broker, the short seller must maintain a margin with him. The initial figure is regulated by the Federal Reserve authorities, and the margin subsequently maintained is regulated by the New York Stock Exchange. The operation is finally closed when the short seller has his broker buy the stock and deliver it to the lending broker. Loans of stock may be terminated on 24 hours' notice by either party.

Large blocks of securities offered for sale by institutions or individuals require special machinery if the market is to be able to absorb them without substantial price declines. The auction market is not broad enough to do so unaided. Formerly, manipulation was often employed to raise the price and stimulate sufficient activity to absorb the securities offered. After 1934 *secondary distributions* were used instead. Large blocks were offered off the board immediately after the close of the stock exchange at about the closing quotation of the day. The brokers or dealers received either a commission or a price concession from the seller. In order to retain trading volume, the New York Stock Exchange in 1942 developed a plan of *special*

offerings whereby members acting as brokers for public buyers who pay the public offering price, without commission, receive from the seller a special commission. This is ordinarily greater than the regular brokerage commission. The plan really substitutes a negotiated for an auction market. Both secondary distributions and special offerings are now employed.

Options are issued through special "put" and "call" brokers, who receive a commission from the maker, but are guaranteed by stock exchange members. A put is a negotiable contract, for an agreed premium, that allows the holder, at his option, to sell, on or before a fixed date, a specified number of shares of a given stock at a stated price. A call gives the holder the option to buy. Both a "spread" and a "straddle" consist of two separate options, identical as to stock and expiration, one a call and one a put. The former is priced at points away from the market, the latter usually at the market.

OVER-THE-COUNTER MARKETS

Supplementing the highly organized exchanges are the informal over-the-counter markets. In these markets dealers and brokers effect transactions chiefly over the telephone with other brokers and dealers. With the expansion of communication facilities they have become nationwide. Unlike the organized exchanges, most participants do not act as brokers who execute orders as agents for customers, receiving a commission for their efforts. Instead they act as dealers, who buy and sell for their own account in the expectation of a profit. Some dealers try to avoid taking a position by keeping the volume of buying and selling in balance. Others are willing to buy more than they sell, or vice versa, and thus take a long or short position. In these markets transactions are not the result of a double auction, with its open bids and offers, but of private negotiation between buyers and sellers who seek out one another. The quotations publicized represent bid and asked, rather than actual, sale prices. In the wholesale or inside market, between the dealers themselves, the spread between bid and asked is much smaller than in the retail or outside market between dealers and their customers.

Participants in over-the-counter markets include investment bankers and stock exchange houses as well as "dealer banks" active in government and municipal securities. Specialized government and municipal bond houses and specialized over-the-counter houses are also included. Much business is done with institutional investors and owners of large blocks of securities. Secondary distribution is provided, in contrast to the primary distribution afforded by the in-

vestment banker. Over-the-counter markets provide almost exclusive trading facilities for United States Government securities, municipal obligations, and railroad equipment trusts. The bulk of the trading in listed bonds also occurs over-the-counter. The same is true of most newly issued securities and the thousands of stock and bond issues (including those of banks, insurance companies and investment companies) not listed on any exchange. These markets are used for closely held issues and those outstanding in small amounts, although many are too closely held or too small for any trading.

THE SECURITIES EXCHANGE ACT OF 1934

The collapse in the securities markets that began in 1929 led to federal regulation of trading in already issued securities. This regulation was provided by the Securities Exchange Act of 1934. The purpose of the legislation was to eliminate the abuses that had developed, and thereby to secure (1) a free and open market, in which security prices reflect in some degree demand and supply based on informed judgment and uninfluenced by artificial manipulation or deceptive devices, and (2) to attain a market in which the volume of trading was limited so that it served investment rather than speculation. Thus it was hoped that the 1934 Act would at worst avoid destabilizing the economy at large, and at best would aid to stabilize the economy in a positive way.

The act, amended on various occasions, employs a fivefold mechanism of control, enforced by civil and criminal sanctions. First, it directly regulates the operations of brokers and dealers. Broker dealers using the mails or channels of interstate commerce must register with the SEC unless their business is exclusively intrastate or confined to exempted securities. Off the exchange, the act effects regulation largely through the National Association of Securities Dealers, Inc., an organization which has prepared a body of rules of fair practice and regulates its members just as the registered securities exchanges regulate their members.⁴ On national securities exchanges, the act exercises control through regulation of the exchanges, which are now registered with the SEC. This regulation supplements and determines the direction of self-regulation by the exchanges. It emphasizes their public significance and responsibility.

Second, the act seeks full and fair disclosure of facts regarding listed securities. A detailed registration statement (meeting adequate accounting standards) must be filed in a form as nearly identical as

⁴ Membership is necessary for a concern to deal with members on a basis (including price, commission, and terms) other than that accorded the general public.

possible with that used for registration under the Securities Act. Issuers must also file periodic reports of their current situation. Solicitation of proxies is regulated in order to provide adequate information and avoid practices believed detrimental to the interests of shareholders.

Third, the act seeks to maintain just and equitable principles of trade. The Commission has recommended rules for adoption by the exchanges to ensure more scrupulous adherence by brokers to their fiduciary obligation to customers and to provide additional safeguards against certain activities which lend themselves to manipulation or excessive trading. These cover such matters as floor trading by members for their own use or discretionary accounts and dealings by specialists. The act also restricts trading activities of corporate officials or "insiders" whose personal interest may clash with that of their stockholders. Publicity is required for trading by corporate officials, directors, and principal stockholders (owning 10 percent or more of any class of registered equity securities) while, in order to prevent unfair use of confidential information, these insiders must account to the corporation for profits realized from any transaction completed within a 6 months' period. The insider cannot sell short any equity security of the corporation.

Fourth, the act forbids manipulation, and bars certain practices on and off the exchanges which it is felt militate against a free and open market and are detrimental to the public interest. Prohibited are:

1. Matched orders, where transactions occur between two or more persons acting in concert without actual change of ownership.
2. Wash sales, where one person sells something and buys it back at about the same time. They resemble matched orders in setting a price and giving the appearance of activity without actual change in ownership, but differ in that only one person is involved.
3. Pool operations, where a series of transactions is undertaken to influence the price of a registered security. Pools sought to raise the price by concerted activity on the part of their members and to unload at a profit on the public attracted by the activity or by information disseminated about the stock. Prior to 1934, pools were permitted under exchange rules so long as technical wash sales, matched orders and actual fraud were absent. Insiders and specialists played a prominent part in them.
4. Bear raiding, which involved short sales of stock in volume at

prices below the last sale price, in order to touch off stop loss orders⁵ and force sales by those whose margins became impaired. Today the Commission's rules restrict the price at which short sales may be effected on an exchange, to avoid creating or accentuating a disorderly condition in the market. The regulation leaves intact the appropriate function of short selling which enhances market stability by permitting selling on advances in prices and buying on declines in prices."

5. Spread of false information about securities and spread of information about market manipulation.

Fifth, as already noted in Chapter 14, the act authorizes the Board of Governors of the Federal Reserve System to control the use of credit for purchasing or carrying securities and thus to break the close link that formerly existed between the stock market and the banking system—specifically, between the level of stock prices and volume of brokers' loans.⁷ The Board has issued Regulation U dealing with loans by banks against securities registered on a national securities exchange and Regulation T dealing with credit extended by brokers and dealers to their margin customers. Members of national securities exchanges and brokers or dealers who do a securities business through such members can extend credit initially on a registered security only in accordance with the Board's regulations. Members may borrow on registered securities only from member banks of the Federal Reserve System and nonmember banks that agree to comply with the Board's restrictions governing bank security loans.⁸ Margin requirements have varied from 25 percent to 100 percent, and they were set at 50 percent in February 1953. The New

⁵ Orders which become orders to sell (buy) at the market when the price of a stock reaches a specified figure. They are used in an effort automatically to limit losses (ensure profits).

⁶ Since a technically sound short position depends on an adequate floating supply of the stock, protection has long been afforded the mistaken short seller who falls into a trap and is in danger of being cornered, that is, forced to settle at a monopolistic price. The Exchange prohibits cornering a stock, can suspend trading in the issue, and can enforce settlement of contracts at a fair price. Corners are not likely to occur at present under the surveillance of the SEC.

⁷ The call loan has been reduced to a minor constituent of bank secondary reserves. Now made largely by banks through direct negotiation with borrowers, it has become part of normal lending to customers. Formerly, it represented primarily residual employment of excess funds or the first means of obtaining funds from the money market in the event of a drain on excess reserves. Thus the institutional arrangement that was at one time an important source of cyclical instability in the financial section of the economy has now largely disappeared.

⁸ The Banking Act of 1933 had forbidden banks to lend "for the account of others" (nonbank lenders) which in October 1929 had accounted for 78 percent of total brokers' loans.

York Stock Exchange requires that when the margin dips below 25 percent of the market value of long stock or a sliding scale on short sales, the account will be closed unless the margin is restored promptly. While the debts of brokers and dealers are limited under the SEC to 20 times their net capital, the New York Stock Exchange limited its members' indebtedness to 15 times their net capital.

Since the Securities Exchange Act was passed in 1934, the volume of trading has remained well below previous levels. The individual of large means has been increasingly superseded by the "little fellow" as a securities buyer and institutions in contrast to individuals have played an increasing role. In part, reduced volume reflects restriction or prohibition of certain kinds of transactions, changes in rules governing trading, and control of the volume of credit. In part, too, it reflects increase in the rates of commission as brokerage costs rose while volume declined, and vastly increased rates of taxation applicable to profits derived from trading. Whether present volume is adequate, is open to question. Since speculation in contrast to investment has declined, the query may be rephrased as follows: How much speculation, and by whom, is desirable? Too much speculation, and by an uninformed public, brings the demoralized markets of 1929, with their disturbing effect on general economic activity. Too little means markets so thin that a moderate amount of selling or buying produces relatively large fluctuations in security prices, as has been witnessed on various occasions since 1934. In between, there is a golden mean, in which intelligent and informed speculation helps make for closer, more continuous and more stable as well as fairer prices. The problem is to adjust technical regulations to achieve this result in the greatest possible degree.

QUESTIONS AND PROBLEMS

1. a. Why is a securities market needed in our present economic society?
b. What role does it play, and how well does it render these services?
2. a. What are the leading classes of transactions which the investment banker has with the commercial bank?
b. What activities of the commercial bank today are competitive with rather than complementary to those of the investment banker?
3. a. Explain why investment bankers are in a position to "direct the distribution of industrial energy."
b. What general test do they use in arriving at their decisions?
4. Explain each of the following statements:
a. "The machinery for distribution is complex; but it is, fundamentally, only merchandising on a broad scale."

- b. "While the history of the United States provides many illustrations of the dependence of the Treasury on investment bankers, this dependence no longer exists."
5. In December 1948 Senator James C. O'Mahoney declared to a group of security dealers that "you have not taken the initiative to provide the capital which a growing free economy demands, and if you permit the free economy to starve for lack of private capital, don't complain if the people turn to Government for what they want."
 - a. By reference to the table in the *Federal Reserve Bulletin* entitled "New Security Issues," evaluate the justice of this criticism, both as to type of security and class of issuer.
 - b. Is the machinery less adequate for small than for large business?
6. Assume that you have \$2,500 and wish to buy on margin 50 shares of du Pont selling at \$95 a share.
 - a. Trace in broad outline the steps in the execution of your order.
 - b. How can each class of member of the stock exchange help effect the transaction?
 - c. Which classes of members are most likely to do so?
7. a. "Since rising stock prices as a rule beget a speculative following they usually are in fact accompanied by increases in brokers' loans and in the volume of security trading and conversely when falling stock prices dry up the speculative interest." Explain.
 - b. Why do call loans today no longer occupy their former position among the secondary reserves of banks?
8. a. Contrast the economic services of the stockbroker with those of the investment banker.
 - b. Contrast the role of the SEC in regulating investment banking with its role in regulating the stock exchanges, both as to objectives, problems and procedures.

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CHAPTER 29

Investing Institutions

CAPITAL formation involves the dual process of saving and investing. In the use of his savings, the individual has several alternatives to mere holding of cash. He can invest in his own business or in a home, in the latter case increasing his equity as he gradually pays off the mortgage. Or, he may invest in a business managed by others. He may do this directly by buying securities or indirectly by turning his funds over to an intermediary. This intermediary pools the savings it receives, makes these pooled savings available for the use of industry and government, and assumes the responsibility of investment management. The investing institution provides the individual with one or more of four related services: specialized portfolio management, diversification of risk, liquidity of funds, and convenience of investment.

To an increasing extent, the individual has turned his savings over to an intermediary, instead of investing them directly himself. Prior to 1920 a substantial part of all long-term funds was provided directly by well-to-do individuals. This is no longer true in the same degree. Higher progressive income, estate, and inheritance taxes have shrunk their available funds and altered their investment tastes. The redistribution of income, particularly disposable income after taxes, has resulted in a greater fraction of total savings being accounted for by the savings of the middle- and lower-income groups; the lowest-income group, of course, continues to do little saving. Moreover, especially since the depression of the early 1930's, individuals have placed greater emphasis on financial security. The influence of these social and economic factors in increasing the institu-

tionalization of investment funds has been reinforced by the promotional activities of the financial institutions themselves.

The change in the source of savings has influenced the direction of their use. Well-to-do individuals have turned increasingly to tax-exempt municipal securities and to annuities. The lower-income groups desire security and liquidity; the dollar value of their savings must be maintained and must be available for unexpected needs. During bad times people live on accumulated savings; in technical language, they dissave. Even in prosperous times some individuals are dissaving to meet their own needs. The lower-income groups, therefore, prefer to hold contractual obligations requiring payment of principal on demand or contingency, such as is provided by savings deposits, E bonds, and life insurance. To meet their obligations, these institutions confine themselves almost entirely to creditor obligations. The growing institutionalization of investment is well illustrated by the following fact: between 1920 and 1950 the proportion of the public and private long-term debt held by institutional investors of all types increased from about one half to nearly three quarters.

In recent years the high cost of living, coupled with high tax rates, has led individuals to seek outlets which hedge against inflation and to seek capital gains in contrast to mere preservation of dollar capital and income. This is especially true of those—largely in the middle-income groups—who have already accumulated an investment fund, in contrast to those who are in process of accumulating one. The movement is reflected in the rapid growth of investment companies, which emphasize equity investments, as well as in the interest displayed by savings institutions in having investment restrictions modified to permit some purchase of equities. But the amounts held in equity form are still extremely limited, as compared with those held in fixed-debt securities.

In part, the group of institutions discussed in this chapter directly facilitate real investment. Most lend, for example, to homebuilders and they purchase securities issued by borrowers wishing to expand their operations. But the institutions also make extensive purchases of securities that are already outstanding and of new issues designed to retire existing obligations. The funds they have available for investment are augmented by borrowers' payments on their loans and by their own sales of securities as investment conditions change. They play a leading role in the securities markets as buyers and sellers of securities.

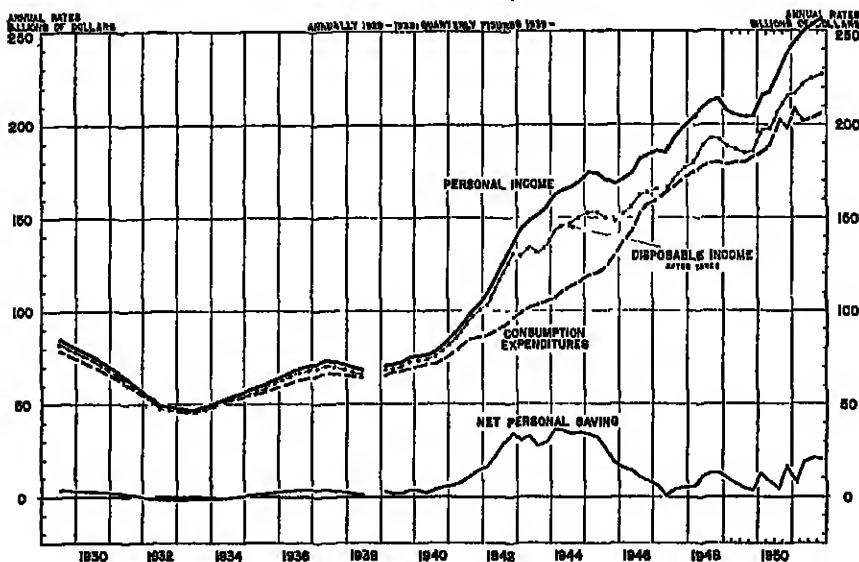
A bird's-eye view of the leading savings institutions engaged in

thrift promotion is given in Table 66. Similar data are not available for those institutions which serve primarily the individual who has already accumulated a substantial investment fund, namely, investment companies, investment counsel, and trust institutions. Among the institutions included in the table, savings and loan associations

FIGURE 60

PERSONAL INCOME, CONSUMPTION, AND SAVINGS

(Department of Commerce estimates, quarterly figures adjusted for seasonal variation)



Source: Board of Governors of the Federal Reserve System.

are discussed in Chapter 30, since they represent basically a specialized type of mortgage banking institution.

SAVINGS INSTITUTIONS

Savings banks receive the savings of persons, largely of moderate means, pool them, and place them in sound investments. They offer a convenient means of accumulating savings, guard the dollar principal while providing a moderate return, and enable the saver to recall his funds readily.

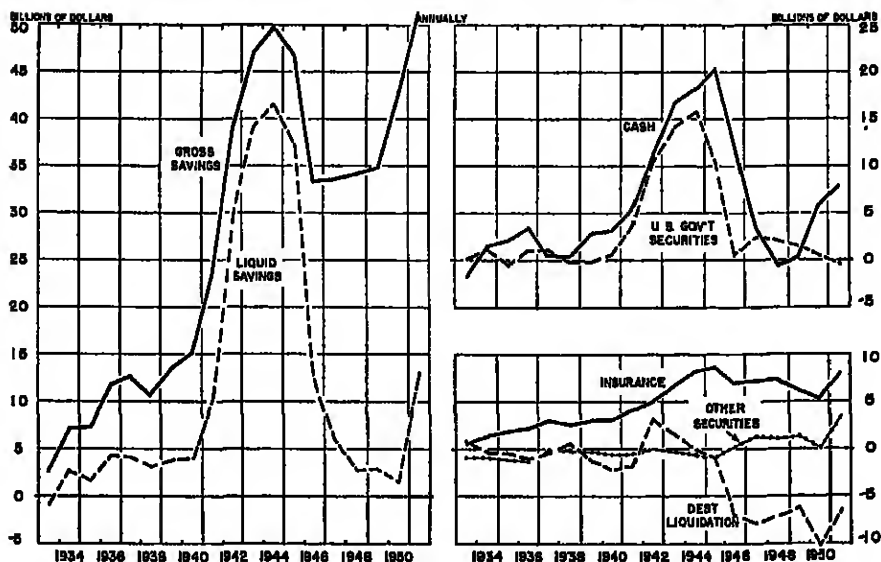
MUTUAL SAVINGS BANKS

Mutual savings banks are nonprofit thrift organizations operated solely for the benefit of their depositors, under the supervision of the banking departments of the states. In their quasi-philanthropic origins these institutions tried to reduce the poverty of the masses by providing a safe place for their savings and by encouraging them to save. They date back at least to Reverend Henry

FIGURE 61

INDIVIDUAL SAVINGS

Securities and Exchange Commission estimates



SOURCE: Board of Governors of the Federal Reserve System

Duncan's "Parish Bank," established in 1810 at Ruthwell, Scotland, and reached the United States in 1816. In that year two institutions were founded, one in Boston and one in Philadelphia. By the fourth quarter of the nineteenth century they had spread throughout the Northeast, in which there had developed a body of wage earners lacking outlets for their funds and a group of civic leaders willing to assume responsibility for investing these funds. Today, as shown in Table 67, there are 529 mutual savings banks with deposits of \$20.9 billion in the United States. Found in seventeen states, all but nineteen with deposits of \$806 billion, are located in New England and

TABLE 66
 PRINCIPAL TYPES OF LONG-TERM SAVINGS OF INDIVIDUALS,
 DECEMBER 31, 1951

Institution	Amount (000,000 omitted)	Average individual holding	Average rate of income paid
Mutual savings banks	\$20,880	\$1,077	2.1%
Commercial banks	36,592	774	1.0
Postal savings	2,808	790	2.0
U. S. savings bonds	49,000	710	3.0 *
Savings and loan associations	16,079	1,356	2.6
Life insurance companies	57,000	2,300	

SOURCE: Home Loan Bank Board, Statistical Summary. Average rates partly estimated.

* Stated at current redemption value. Yield is for Series E, as revised, held to maturity.

the Middle Atlantic seaboard states. Of these banks, at the close of 1951, 130 or 25 percent, with deposits of \$12.2 billion or 58 percent, were located in New York and 188 or 36 percent, with deposits of \$3.4 billion or 16 percent, in Massachusetts.

The unique character of mutual savings banks is evident in their operation and control. Management is vested in a board of trustees whose rewards consist primarily of honor and prestige. They formulate policies, select officers, and oversee operations. Originally selected by the organizers of the bank, since there are no shareholders in most states they become a self-perpetuating body, which elects new members only to replace those who die, resign, or are removed.

The mutual savings bank has no capital stock. In lieu of it, the newly organized institution has a fund advanced by its organizers. This is repaid gradually from earnings. Depositors, while they are creditors, do not receive a fixed rate of interest. Instead, they receive "interest dividends" at a rate fixed from time to time by the trustees in the light of the earnings for the current period. The rate, however, tends to show a fair degree of stability. The income remaining undistributed is used to build up a guarantee fund or surplus to protect the integrity of the deposits. State laws generally require that a specific portion of the earnings be so retained until surplus reaches a specified percentage of deposits. Each new depositor automatically

TABLE 67
NUMBER AND DEPOSITS OF MUTUAL SAVINGS BANKS,
DECEMBER 31, 1951

State	Number	Deposits (000,000 omitted)
Massachusetts	188	\$ 3,412.9
New York	130	12,188.0
Connecticut	72	1,390.4
New Hampshire	34	286.5
Maine	32	244.1
New Jersey	23	663.0
Maryland	9	406.7
Rhode Island	8	276.6
Pennsylvania	7	1,136.3
Vermont	7	89.8
Washington	4	210.3
Indiana	4	45.3
Wisconsin	4	14.9
Ohio	3	251.6
Delaware	2	89.8
Minnesota	1	174.5
Oregon	1	19.3
United States	529	\$20,900.1

SOURCE: National Association of Mutual Savings Banks, based upon direct reports from individual banks.

shares the protection afforded by the bank's previously accumulated surplus. Only as earnings are realized on his deposits do his funds contribute to the growth of surplus. Thus, the surplus existing at any one time serves not only to protect existing deposits but also to "margin" future deposit growth.

Mutual savings banks are designed primarily for small savers. Various states therefore limit the maximum balance that a single depositor may hold. In New York, for example, it is \$10,000, exclusive of accrued-interest dividends. At times individual banks have made further restrictions. The average regular account in a mutual savings bank is currently about \$1,300. By law the banks must reserve the right to require notice of withdrawal, usually 30 or 60 days. In practice, they customarily pay on demand.

Since World War I the shift in the saver's emphasis has resulted in the growth of special types of accounts. Savings club plans pro-

vide funds for vacation, education, Christmas gifts, or purchase of a home. Industrial or payroll savings plans provide for the employer to deposit in a savings bank a periodic specified sum from the wages of workers who wish to participate. School savings, first introduced in 1882, seek to promote habits of thrift among the young. School and club plans are encouraged as a potential source of larger regular deposits; at the close of 1951 they accounted for one fifth the total number of depositors but less than one third of 1 percent of total deposits.

In several states the banks write life insurance in limited amounts at moderate rates. Inaugurated in Massachusetts in 1908, the plan was extended to New York in 1939 and to Connecticut in 1941. The amount which any one bank may place on a single life is limited, for example, to \$5,000 in New York. At the close of 1951, when there were 598,000 savings bank life insurance policies in force for \$632 million, savings bank life insurance was sold by 261 banks, and in each of the three states those banks which had organized life insurance departments cooperated through a central fund.

Mutual savings banks render various other services. Since about 1945, some banks have offered "packaged saving." Under this system an individual, through systematic deposits over a specified period can accumulate a bank account and a block of government savings bonds, together if desired with the protection of a savings bank life insurance policy. In three states—New Jersey, Indiana, and Ohio—a savings bank may accept checking accounts, but the total does not exceed \$22 million. In most states they offer safe deposit facilities and sell traveler's checks, while in a few, they issue money orders and provide trust facilities.

If they are to serve their depositors properly, mutual savings banks must emphasize safe investment. Most of the seventeen states regulate their investments, both as to type and diversification, and as to quality. Investment is confined to a legal list of securities meeting specific tests set up by law. Investment is largely confined to creditor securities, but equities are admitted to a limited extent, consisting chiefly of stock in banks and housing corporations. There is a growing tendency to broaden the classes of investments, in particular by admitting securities that do not meet all the tests but are recommended by specified expert bodies. Table 68 shows that investments today are largely concentrated in United States Government obligations and real estate mortgages, both on residences and, in the larger centers, on commercial properties and apartments. In 1951, for the first time since 1942, investment in the private sector

TABLE 68

PRINCIPAL ASSETS AND LIABILITIES OF MUTUAL SAVINGS BANKS,
DECEMBER 31, 1951

	Amount (000,000 omitted)	Percent of total
Cash on hand and in banks	\$ 883.1	3.8
Mortgage loans	9,728.8	41.4
Other loans	127.0	.5
U. S. Government obligations	9,817.8	41.8
Other government bonds	150.1	.7
Railroad bonds	850.2	3.6
Public utility bonds	973.2	4.1
Other bonds	420.9	1.8
Stocks	226.5	1.0
Banking house	119.2	.5
Other real estate	5.1	.0 ^a
Miscellaneous ^b	174.9	.8
Total assets	<u>\$23,476.8</u>	<u>100.0</u>
Amount due depositors	\$20,911.3	89.1
Capital debentures	4.3	.0 ^a
Surplus, guarantee funds, undivided profits, and unallocated reserves	2,451.5	10.4
Other liabilities	109.7	.5
Total liabilities	<u>\$23,476.8</u>	<u>100.0</u>

SOURCE: National Association of Mutual Savings Banks, based upon reports from state banking departments and from individual banks.

^a Less than ½ of 1 percent.

^b Includes investment in deposit insurance funds, etc.

of the economy exceeded investment in the government sector. In 1947 peak holdings of United States Governments of \$12 billion had represented 61 percent of assets at the time. Some changes in policy, both as to investments and as to interest dividends are taking place. These result from the imposition under specified conditions, effective January 1, 1952, of federal taxation of the banks' undistributed income. This had hitherto been exempt.

From 1932 to 1945 the mutual savings banks were under considerable pressure, but they maintained their exceptional record of safety. They experienced losses—first on securities and later, and

more heavily, on mortgages, coupled with a progressive lowering of rates of return on investments. After 1942 the sharp gain experienced in deposits necessarily flowed into low yielding United States Government obligations. Throughout the entire period the banks made progressive cuts in the rate paid depositors. The early depression years had already shown the savings banks the benefits of cooperation. In July 1933, the New York savings banks organized two institutions, owned entirely by themselves, to provide centralized machinery. The Savings Banks Trust Company receives deposits from savings banks and lends to them against suitable collateral. It also acts as correspondent, investment advisor and trustee, and for a number of years operated a plan of deposit insurance which was abandoned in favor of membership in the FDIC. It also recommends changes in the legal list to the state authorities. The Institutional Securities Corporation services mortgages and aids in management, sale, purchase, and inspection of real estate. Less elaborate organizations exist in several other states. Massachusetts has both a central fund and deposit insurance, as have Connecticut and New Hampshire. Elsewhere, mutual savings banks are for the most part insured with the FDIC and subject to its supervision as well as that of their own state banking departments.

SAVINGS DEPARTMENTS

Stock savings banks resemble mutual savings banks confining themselves to receiving time deposits. They differ in that they are owned by stockholders and operated for their benefit. Today few such banks exist.

Commercial banks entered the savings business long after the mutual savings banks. Operating on a nation-wide basis, they have had the advantage of serving the newer and more rapidly growing areas of the West and South, instead of being confined largely to the older more settled Northeast. About 1910 the volume of their time deposits first reached that of the mutual savings banks. By 1951 it was somewhat under twice the savings bank figure after having dipped sharply during the depression of the 1930's with its extensive bank closings. In some of the mutual savings bank states, however, the mutual savings banks still dominate. The growth of savings departments was aided by the Federal Reserve Act of 1913, which set legal reserve requirements against time and savings deposits in national banks far below those against demand deposits and which also increased mortgage-lending powers. Nevertheless, commercial banks pay a lower rate to depositors than do mutual savings

banks—in 1951, according to the FDIC, 1.08 percent in contrast to 1.88 percent for federally insured institutions.

Ordinarily there is no complete departmentalization, nor are savings funds segregated from commercial funds and invested separately. Moreover, investments are not subject to the same restrictions as mutual savings banks. However, several states in New England and elsewhere do provide segregation. California goes so far as to require that separate capital and surplus be assigned to the savings department, besides restricting the investment of the department's funds. The establishment of federal deposit insurance in 1934 stilled the agitation for special protection for savings deposits. In order to reduce bank hazards the FDIC and the Federal Reserve Board were empowered to regulate rates of interest paid on time deposits by insured nonmember and member banks of the Federal Reserve System.

POSTAL SAVINGS

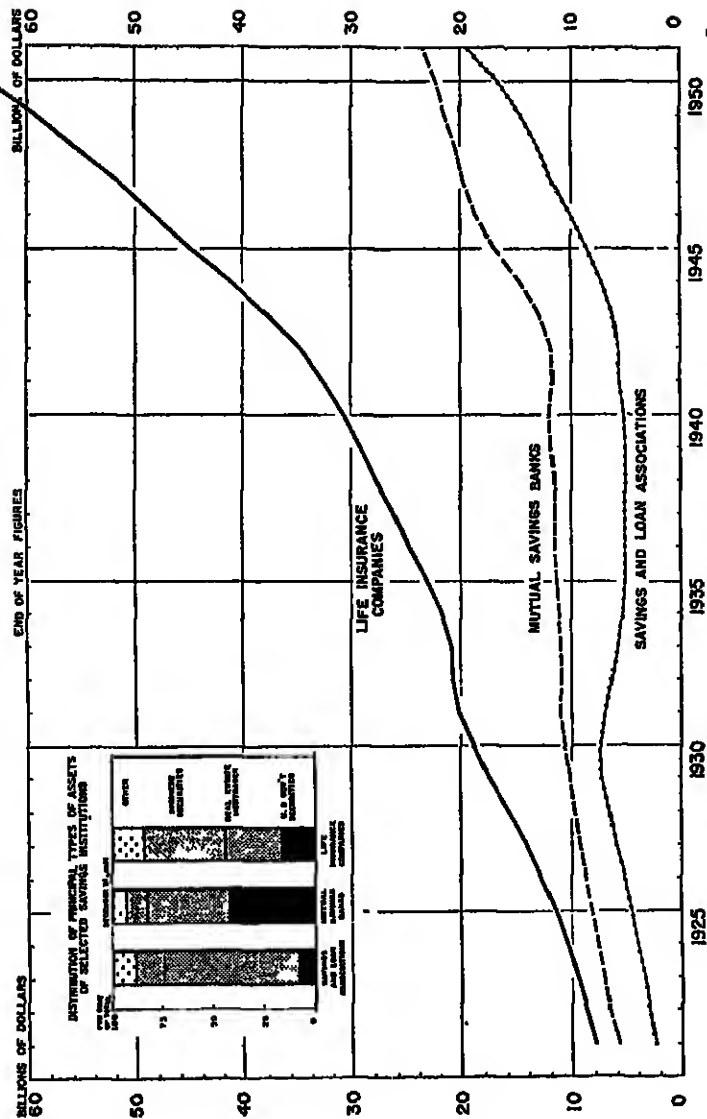
Postal savings was established in the United States only in 1910, although government savings banks operated by the post office or by municipalities had long existed in Europe. Impetus was given by the panic of 1907, which temporarily closed many banks, as well as by the lack of interest displayed by many banks in soliciting savings deposits. This was noticeable in sections other than the Northeast (served by mutual savings banks) and for national in contrast to state-chartered commercial banks.

Anyone at least 10 years old may open a postal savings account. Deposits must be in multiples of one dollar and are evidenced by nontransferable certificates issued in various denominations. The maximum amount for an individual is \$2,500. Deposits earn interest at 2 percent a year, but interest is only compounded annually, by purchasing an additional certificate with the interest due. Originally the rate paid was well below that prevailing at private savings institutions.

The Postal Savings System is administered by the Postmaster General. A board of trustees, in which he is joined by the Secretary of the Treasury and the Attorney General, invests the deposited funds. Originally it was thought that the great bulk of the funds, aside from a reserve of 5 percent set aside in lawful money, would be deposited for use locally with qualified depository banks which paid a specified rate of interest and pledged public securities.¹ The bal-

¹ Now required only for that part not covered by federal deposit insurance.

FIGURE 62 TOTAL ASSETS OF SELECTED SAVINGS INSTITUTIONS



Source: Board of Governors of the Federal Reserve System.

■ LIFE INSURANCE COMPANIES

All people face at least two financial risks. They may die too soon, with consequent hardship to their families and other dependents. Or they may live too long, past their active income-earning years. Life insurance companies enable people to cooperate in sharing these risks. For the one purpose they provide life insurance, for the other annuities. A life insurance policy pays a specified sum upon the death of the insured or the maturity of the policy, whereas an annuity provides a periodic income beginning at a stated age. In conducting their operations, life insurance companies have become strong competitors of banks for savings and for investments for their accumulated funds. At the close of 1951 the United States companies had 217 million life insurance policies in force, for a face amount of \$262,815 million and 8.9 million annuity contracts with a total annual income of \$1,408 million; their own assets equaled \$68,292 million.

What gives life insurance companies their importance as saving and investing institutions is the fact that most life insurance policies combine investment with insurance or protection. Take the pure insurance aspect first. Mortality statistics show the proportion of deaths that will occur in a given year in any large and healthy group of individuals of a given age. If 100,000 individuals aged 35 are insured for \$1,000 each and statistics show that 1 percent of them will die within a year, the company must collect an insurance premium of somewhat more than \$10 from each of the group if it is to be able to pay \$1,000 to the beneficiaries of each of those who die. As the age of the group increases, the proportion of deaths will rise and so will the premiums of the members needed to make the required payments that year. This is essentially the principle involved in term insurance. Each year's premium collections equal each year's disbursements to beneficiaries, plus costs of administration.

Term insurance is used only to a limited extent today. Instead, an investment element is introduced into insurance through the use of the level premium plan, under which each member pays the same premium each year. During the earlier years of his policy the insured therefore on the average pays more than the sum needed to cover each year's mortality and the overpayment is invested at compound interest in a reserve to cover part of the face value of his policy.⁸ Later in life, the constant fixed premium is insufficient to

⁸ This legal reserve gives the policy its cash surrender value in case the insured relinquishes it, and its loan value in case he borrows against it. Term insurance, how-

cover the annual mortality cost and is supplemented from the previously accumulated reserve. Thus, the benefits payable under the usual life insurance policy consist of two parts: savings mounting year by year at compound interest in a reserve, and a balance of insurance protection, decreasing as savings accumulate, until the legal reserve reaches the face amount of the policy.

There are several principal forms of life insurance policies. Whole life policies usually require that the constant or level premium be paid throughout the individual's lifetime; these are called ordinary or straight life policies. Also popular are limited payment life policies which require instead payments for a limited period, such as 20 years, the payments ceasing if the individual dies meanwhile. To be contrasted with whole life policies of either type are endowment policies. Under them, the face amount is paid to the insured individual himself if he reaches the age specified in the policy; if he fails to survive, it is then paid to the beneficiaries. Endowment policies because of their shorter average period contain a greater investment element than do whole life policies. They afford assurance that the goal of the individual's savings program will be reached, regardless of whether or not he himself lives to enjoy it.

Premium rates vary with the age when insurance is taken out and with the type of policy. They involve actuarial calculations based on mortality tables, anticipated income from reserves, and a loading charge for the substantial expenses of sale and operation. The annual premium on a whole life policy is less if written at the age of 30 than if written at the age of 40. For insurance written at the age of 30, the annual premium payable on a 20-year endowment policy is almost twice that payable on a 20-payment life policy, which in turn is one and a half times that on an ordinary life policy. Policies, whether written by mutual companies (operated for their policyholders in much the same way that mutual savings banks are operated for their depositors) or by privately organized stock companies seeking a profit, are ordinarily participating. The dividends paid policyholders may be considered refunds of excess premium collections, reflecting more favorable mortality experience, larger investment income and smaller operating expenses than anticipated.

Two special types of life insurance may be mentioned. Group insurance is ordinary insurance arranged by an employer to cover all his employees, at a flat premium rate without medical examination.

ever, accords protection for a limited period only and accumulates no reserve. Under a policy of term insurance payment is made only if death occurs within the stipulated period and nothing is paid in case the insured survives.

In 1951 the average policy was \$1,860. Industrial insurance is sold to poor people who pay their premiums weekly or monthly. The typical policy is \$320. Ordinary life policies range from \$1,000 upward, with an average of \$2,300, and make an equal appeal to those of large as well as small means. They are even used by business concerns to provide financial protection against the premature death of a key man in the business.

Life insurance companies also write annuities. The individual purchases, either outright or by installments, a periodic income beginning at a stated age. Arrangements can be made if desired to have payments to two people, such as husband and wife, while both are alive and then to the survivor for life. The proceeds of a life insurance policy can be used to buy an annuity for the beneficiary, if desired, instead of the settlement being in cash. The annuity represents gradual disbursement of the premium payments and the accumulated income. As in life insurance, the insurance company averages out the life expectancy of the purchasers, although different mortality tables are used in each of the two cases. Both from their life insurance and their annuity business the companies accumulate large sums to invest.

Because of their close contact with the mass of the people, life insurance companies are regulated by state law. Federal supervision has been proposed at times because of the size and the interstate character of their operations. The laws governing their investments have been increasingly liberalized. They are generally more flexible than those applicable to savings banks. While there is no legal list in most states, for example New York, investments which do not in the opinion of the insurance department meet legal standards are not regarded as "admitted assets" which must equal reserve liabilities. Providing a market for several billion dollars worth of securities and mortgages annually, as policyholders increase with active sales efforts, the life insurance companies exercise a major influence upon these markets. They have been active in private placements of securities. In an effort to maintain income they have also bought commercial real estate and leased it to business concerns and have built large rental housing projects. The character of their assets in 1951 is indicated in Table 69.

Insurance is also used to indemnify against a wide variety of other types of loss. Prominent among them are the risks from fire, theft, and marine disaster. Fire, casualty, and other carriers of nonlife insurance are usually stock companies. Unlike life insurance companies they insure against hazards that are uncertain of occurrence, not subject to as precise determination, and for shorter periods.

TABLE 69

DISTRIBUTION OF ASSETS, UNITED STATES LIFE INSURANCE COMPANIES,
DECEMBER 31, 1951

	Amount (000,000 omitted)	Percent of total
U. S. Government securities	\$11,011	16.1
All other government bonds	2,659	3.9
Securities of business and industry	28,214	41.3
Railroad bonds	\$ 3,309	4.8
Public utility bonds	11,238	16.5
Industrial and miscellaneous bonds	11,441	16.8
Stocks	2,226	3.2
Mortgages	19,314	28.3
Farm	1,525	2.2
Nonfarm	17,789	26.1
Real estate	1,633	2.4
Policy loans	2,587	3.8
Cash	1,097	1.6
Miscellaneous assets	1,777	2.6
Total	\$68,292	100.0

SOURCE: *Life Insurance Fact Book* (1952).

They have, therefore, come to maintain a relatively heavy margin of assets above true insurance liabilities so as to cover unexpected contingencies. They are important institutional investors. Less restricted by law than are life insurance companies, they often invest in common stocks and in investment policy and achievements often resemble investment trusts. It is estimated that in 1945 the fire, marine, and casualty carriers in the United States had gross assets of \$4.5 billion, of which less than one third represented reserves against unused premiums.

■ INVESTMENT COMPANIES

The institutions which have thus far been discussed contract to repay principal upon demand or contingency. They emphasize safety of principal and certainty of income, which they achieve by confining their investments primarily to bonds and mortgages. The individual seeking higher income and/or appreciation

in principal, if not prepared directly to conduct his own investment program, must turn to other classes of institutions placing greater emphasis on investment in common stocks. These institutions include investment companies, investment counsel, and trustees. They primarily serve patrons of larger means than do savings banks and savings departments. They administer already accumulated investment funds instead of emphasizing thrift promotion.

An investment company or investment trust pools the accumulated funds of a number of individuals for investment in securities under competent management for the benefit of the participants. It aims to spread risk through diversification and to provide trained and experienced management to supervise the funds continuously.

During the nineteenth century England became the world's leading creditor nation. It employed the investment trust, beginning with the 1860's, as a vehicle for investing surplus capital in other nations where yields were higher than at home. Conservative principles of operation became well established after the house cleaning following the speculative excesses that culminated in the Baring crisis and the panic of 1893. Large-scale development in the United States awaited the close of World War I, when economic conditions became favorable for its expansion. Following rapid growth accompanied by speculative abuses in the later 1920's, the stock market collapse of 1929 inaugurated a period of readjustment of practices that brought in its wake the Investment Company Act of 1940. Public faith was restored and rapid growth resumed. The growth has been aided by the increasing share of the national income received by lower- and middle-income groups, unskilled in investing for themselves and unable because of cost to engage competent investment counsel, but desirous, because of the greatly decreased level of interest rates, higher taxes and rising cost of living, of investing in equity securities.

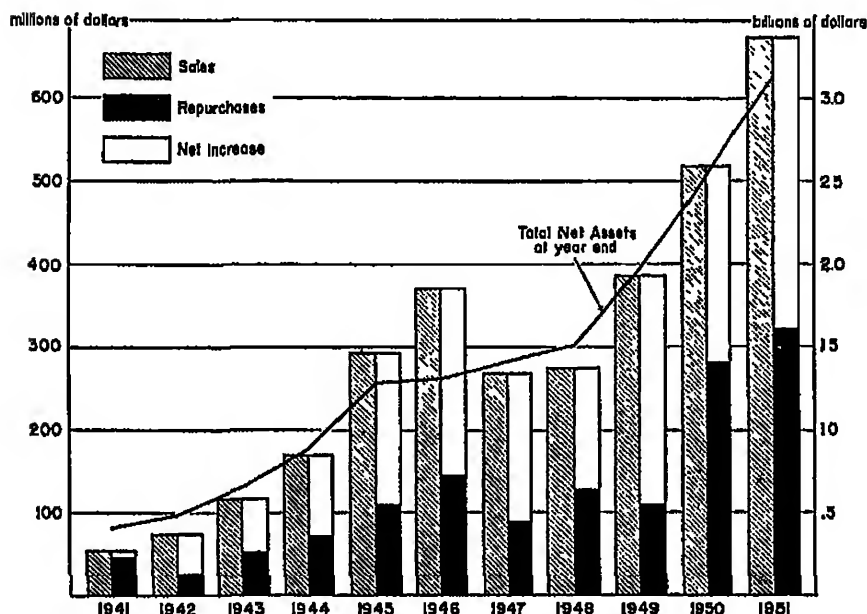
MANAGEMENT COMPANIES

Investment companies in the United States may be classified in many ways. The great bulk are management investment companies, in which the management has much flexibility in selecting and trading in securities. They, in turn, fall into two groups, according to method of operation. *Open-end* companies make continuous daily offering of new shares, at a price bearing a fixed relation to the net asset (liquidating) value. They are obligated to redeem outstanding shares, when offered by the holders, at the approximate liquidating value. Since 1940 funds for redemption have

been provided by the excess of new sales over repurchases; otherwise, liquidation of part of the portfolio would be necessary. *Closed-end* companies, instead, usually raise their capital at a single time, as do ordinary corporations; there is provision neither for issuance nor redemption of shares. The owner must sell his shares and the would-be owner buy them in the open market—in some cases on the

FIGURE 63

GROWTH OF OPEN-END INVESTMENT COMPANIES



SOURCE: National Association of Investment Companies.

stock exchange, where they usually have sold at a discount from asset value. Of the 368 investment companies registered with the SEC on June 30, 1951, with estimated total assets of \$5.6 billion, 154 were management open-end companies and 105 management closed-end companies. Open-end companies have shown rapid gains in recent years and hold over half the total assets, whereas few closed-end companies have been organized since 1929.

In legal form investment companies are either corporations or, in a few cases, business trusts. Closed-end companies usually, but not universally, have senior capital composed of bonds and/or preferred stock. Thus, their common stock possesses all the advan-

tages and handicaps of leverage, magnifying gains (and declines) in earnings and in market price of the shares. Open-end companies, termed "mutual funds," have a capitalization consisting of one class of shares and (with a single exception) have no funded debt. The sponsor acts as general distributor (wholesaler) of the shares, which are sold to the public through retail investment dealers at a price usually ranging from 6 to 9 percent above their liquidating value. The dealer's commission exceeds that on securities transactions generally and permits active sales campaigns. Funds sponsored by investment counsel are usually sold direct by them to the public for smaller spreads, as low as 1 or 2 percent. In numerous cases several funds have the same sponsor, and most dealers handle several funds. Virtually without exception, the invested assets and cash are held by an independent custodian.

Both closed- and open-end companies approach their investment problems in a similar way. Balanced funds, increasingly important in recent years, vary from time to time, the relative proportions of common stock, preferred stock, and bonds. Common stock funds hold common stocks predominantly or exclusively. Specialized funds hold the securities (largely common stocks) of one industry (such as tobacco) or one class of security (such as bonds, income preferred stocks, or speculative common stocks). The varied investment objectives and policies of different companies provide plans to appeal to the various types of investors. These range all the way from emphasis on income to search for capital appreciation. Instead of diversifying, certain management investment companies concentrate a substantial part of their assets in a few special situations. The purpose of such management investment-holding companies is, while furnishing some managerial service and advice, not to retain permanent control but rather to develop such situations for the sake of taking substantial capital gains. In only a few cases, however, does the investment company interest itself directly in promotional situations, to furnish capital to new enterprises.

OTHER FORMS

The *unit* or *fixed* trust involves deposit of specified securities with a trustee, which issues participating certificates in the fund. Relations between the depositor who sponsors the trust, the trust institution that acts as trustee, and the certificate holders who are the beneficial owners of the trust property, are governed by a trust indenture, contract of custodianship or agency, commonly running 25 years. For each unit (such as four shares of the stocks of

thirty named leading corporations and the dividends and other property accumulated thereon) deposited with it, the trustee issues the depositor the specified number of certificates (such as 2,000). The depositor creates units at the same time as certificates are sold to investors by his dealers. The selling price equals the current value of the underlying property plus a "load" averaging 9 percent for charges and profit. These certificates can be surrendered at any time to the trustee in return for either the aliquot part of the property itself (for example, by the holder of certificates representing a unit) or its cash equivalent. While shares are being sold, the sponsor makes a market for them at somewhat under the current selling price; thereafter, they are traded in over the counter. The portfolio may be either general or specialized in nature. In semifixed trusts substitutions may be made under stated conditions, for example, from a supplemental list of securities. In true fixed trusts, on the other hand, elimination is permitted only in event of merger or adverse developments such as nonpayment of a dividend. Distributions are usually made to certificate holders semiannually. These include cash income received on the underlying property together (unless added to the corpus of the trust property) with proceeds from sale of rights, stock dividends, and eliminated securities.

Indigenous to the United States, fixed trusts were popular in the early 1930's. The public turned to a long-term investment program operated according to pre-established rules after its disappointing, if not disastrous, experience with investment management in the stock market crash of 1929. More than 150 such trusts were organized, most by about half a dozen sponsors. Subsequently, formation of new unit trusts and distribution of existing unit trusts ceased as public favor turned to mutual investment funds, into which some unit trusts were converted. Despite the decrease in number, ninety-four unit trusts were registered with the SEC on June 30, 1951. The unit trust is based on the theory that common stocks of leading companies should in an expanding economy such as that of the United States, show a long-term uprend in price. Accordingly it ignores intermediate fluctuations.

The *common or commingled trust fund* is similar to the open-end investment trust, but it is managed by a single trust institution which uses the device to secure more effective and economical administration of the assets of small trusts. While their use is growing, participation in these funds is not open to the general public.

Face-amount installment certificates serve the small investor who makes monthly payments over a stipulated period of years (usually 10 or 15). They provide him with a guaranteed sum when his con-

tract matures, representing the amounts saved plus interest. Prior to maturity, he can surrender his contract; in the early years, for less than the amount paid in; in the later years, for the sum paid in plus a low interest return. The certificates resemble endowment life insurance policies, but the investments of the few companies that issue them resemble the portfolios of investment companies rather than those of life insurance companies.

Installment investment plans are not, strictly speaking, investment companies. They are methods by which shares in conventional investment companies (or, in some cases, common shares in a specified prominent industrial corporation) may be acquired on the installment plan.

REGULATION

On the basis of an exhaustive study by the SEC, Congress enacted the Investment Company Act of 1940 to cover phases of investment company operation not covered under either the Securities Act of 1933 or the Securities Exchange Act of 1934. While registration under the act is optional, the activities of unregistered companies are so severely limited (by forbidding use of the mails or any instrumentality of interstate commerce for the purchase or sale of securities) that registration becomes well nigh compulsory.

The general purposes and provisions of the act are as follows:

1. To require the companies to define their investment policies in a statement filed with the SEC and to permit change only by a majority vote of shareholders.
2. To secure honest and unbiased management. A majority of the directors must be neither investment bankers nor members of the security-distributing organization of the investment company. At least 40 percent of the directors may not be officers or outside investment advisers of the company. The act also forbids self-dealing—involving transactions with an insider acting as principal—and it applies the provisions of the Securities Exchange Act of 1934 to insider dealings in their securities.
3. To insure greater participation in management by security holders. At least two thirds of the directors must be elected by the stockholders. Investment adviser contracts are limited to 2 years and are subject to approval of shareholders, who also ratify selection of the accountants.

4. To provide an adequate capital structure. The act requires a minimum capital of \$100,000 before the stock of an investment company can be offered publicly. In the case of closed-end management companies, it requires that funded debt (or bank loans) be covered at least three times by assets and preferred stock twice. The SEC limits such companies to one class of bonds and one class of preferred stock. Open-end companies cannot issue senior securities but may borrow limited amounts from banks.
5. To require disclosure of the source of dividend payments, whether from capital gains or ordinary investment income.
6. To regulate accounting procedures and information furnished shareholders. Reports must be submitted quarterly to the SEC and semiannually to stockholders.
7. To regulate selling practices, including sales literature.

Restoration of the investment company to public favor has been aided by the National Association of Investment Companies, a trade association embracing the great bulk of the active management investment companies. It provides self-regulation of the industry and cooperates with the SEC and the state regulatory agencies. Unit trusts have no such body, but in selling have observed the code of fair practice of the National Association of Securities Dealers. A good commentary on the present status of management investment companies is afforded by the growing tendency to make them legal for trustee (fiduciary) investments.

Investment company policies have also been vitally affected by the federal income tax law. Under the Revenue Act of 1942 (Supplement Q), an investment company may elect irrevocably to be taxed as a "regulated investment company." To qualify, it must hold at least half its assets in cash or diversified securities, invest no more than 25 percent of its assets in the securities of any one issuer, receive less than 30 percent of its gross income from sale of securities held less than 3 months, and distribute at least 90 percent of gross income each year. In return, it pays the regular corporate tax on retained earnings and 26 percent on retained capital gains. The holders of its shares pay taxes at their respective individual rates on the income and capital gains distributed to them. The result is to encourage distribution of substantially all income and gains realized during the year.

■ INVESTMENT COUNSEL

Investment counsel, like the investment company, makes available the services of specialists. It gives continuous advice for a fee to clients on the investment of their funds in the light of the individual needs of each client, individual, or institution. As a specialized occupation, it arose after World War I, with the broadened public interest in securities that resulted from the wide sale of Liberty bonds and the boom in the stock market. In addition to specialized investment counsel firms, professional investment counsel service is available from financial statistical agencies, and trust institutions, as well as from investment bankers and stock brokers. On June 30, 1951, there were 1,057 investment advisers registered with the SEC under the Investment Advisers Act of 1940. With certain exceptions, this act requires registration of those who offer investment advice for compensation and limits the use of the term "investment counsel" to those who register.

Unlike the investment company investment counsel is not available to the small investor. Most investment counsel will not supervise funds under a certain minimum, such as \$50,000 or \$100,000. Fees are usually payable quarterly at an annual rate ranging from $\frac{1}{2}$ to 1 percent on the minimum principal and at a declining rate for amounts in excess of the minimum. Some investment counsel sponsor and supervise investment companies for use by investors with smaller sums, just as some trust companies operate common trust funds. In addition investment counsel serve institutional investors who control insufficient funds to set up the necessary investment organization of their own. The fund is under constant supervision by the investment counsel, but is not placed in his custody. He may be purely advisory, submitting recommendations together with the reasons supporting them, to clients who then place the actual orders with the broker. On the other hand, the client may give counsel full discretion in managing the account.

■ TRUST INSTITUTIONS

The concept of trusteeship can be traced back to antiquity. While the trust is highly complex, its essence can be stated simply. Trust functions include service both as *trustee* and as *agent*. A trust exists where a trustor or creator commits property to a trustee to administer in accordance with the terms of a trust agreement for the benefit of a specified beneficiary. An agency

relationship exists where an agent is authorized to represent and act for a principal in his business or contractual dealings with third parties. The primary difference between an agent and a trustee is that the agent does not take title to the property involved and usually transacts business under the name of the principal. The trustee takes legal title to the property and does business in his own name, although *the equitable title to and beneficial interest in the property remains in the beneficiary*. Both trust and agency services are rendered to both individuals and corporations, as well as eleemosynary institutions such as hospitals and colleges, and communities. The leading classes of activities can be merely indicated here.

Trust functions are being performed to an increasing extent by institutions instead of individuals. The superiority of the institution over the individual is well established. It provides accessible, continuous, and impartial administration, subject to strict governmental regulation and possessed of greater financial responsibility. Its volume of operations makes possible specialized legal, accounting, tax, and investment knowledge, skill, and experience at reduced cost. Where the personal element is deemed desirable, an individual may be named to act, for example, as coexecutor or co-trustee, with a corporate fiduciary.

In the United States the trust institution dates back to 1818 in Massachusetts and 1822 in New York. Trust business grew with the development of large private fortunes and the emergence of large corporations, accompanied by a shift in emphasis from tangible wealth to intangible personal property such as securities. It remained relatively unimportant until after the Civil War. As time passed, trust companies found trust business to be logically allied to banking rather than to the writing of insurance, with which it was initially combined. They, therefore, relinquished insurance for banking, which their broad charters permitted them to undertake. On their part, banks were authorized to add trust activities. National banks were first empowered by the Federal Reserve Act of 1913 and an amendment in 1918 to obtain approval from the Federal Reserve Board to exercise all trust functions permitted state banks and trust companies in the state in which the national bank was located. Their participation was made complete when they were granted indeterminate existence in 1927. Thus, few institutions currently confine themselves exclusively to trust business; the larger banks operate trust departments, just as the larger trust companies operate banking departments. Approximately 1,800 national banks and between 800 and 1,000 state-chartered institutions are authorized to operate trust departments. Probably fewer

than 100 trust companies confine themselves to trust business alone.⁴

The activities of trust departments must be conducted in accordance with the terms of the trust instrument and the state law. Trust activities must be carried on by a separate department, with separate records and funds, and records and funds of individual trusts may not in general be mingled. The trust department of a state bank or trust company is supervised by the state banking department, that of a national bank by the Comptroller of the Currency or the Board of Governors of the Federal Reserve System.

The trust institution plays a vital role in our present economic and social order. Serving both users and suppliers of capital, it has three broad economic functions.⁵ First, it conserves wealth or private property, safekeeping accumulated capital and avoiding its wasteful use. Second, both in its handling of estates and in its services to corporations in connection with their security issues, it encourages the collective ownership of industry. Third, it helps stabilize investment and hence enterprise, by placing funds in productive use—directly, through the huge volume of funds it controls and indirectly, through its advice to clients. In specific cases, the advice may far transcend the purely financial.

SERVICES TO INDIVIDUALS

Personal trust business includes performance of trust and agency functions for individuals. The trust functions include the settling of estates of deceased individuals and the care and management of trusts created by either deceased or living persons.

An *executor* acts under the last will and testament of a deceased person, whereas an *administrator* is appointed by the court of jurisdiction if the individual dies without leaving a will (intestate) or naming an executor in his will. The duties of both are similar, namely, to collect the assets of the estate, pay debts, taxes, and other charges, and distribute the balance. Distribution is made according to the terms of the will (where one exists) and the state law governing inheritance, and both executor and administrator account to the court for the performance of their duties. An ancillary executor is named to administer property owned in another state. The duties of an executor are usually temporary; otherwise, if the will

⁴ There is no reliable information on the volume of assets held in trust departments because a large proportion of the assets are stocks and bonds of closed corporations and real estate for which there is no reliable appraised value.

⁵ See J. G. Smith, *The Development of Trust Companies in the United States* (New York, 1928), pp. 3, 181 ff.

sets up a trust, it also names a *testamentary trustee*. Similar are the duties of a *guardian* of the estate of a minor, whether appointed in the will or by the court, and of a *conservator* of the estate of an incompetent.

Voluntary or *living trusts* are created through deed or agreement with a living person and may be revocable or irrevocable. The assets of irrevocable trusts are essentially gifts. Many types exist. Most important of those that can be created by living persons only, are: (1) *retirement trusts*, created to build up an estate during the productive years of an individual's lifetime, while providing relief from the problems of managing the property during his declining years; (2) *life insurance trusts*, which consist of the proceeds of policies on the creator's life—the policies are made payable to the trustee, with whom they deposited; he collects the proceeds when due and distributes or holds them as directed by the agreement;⁶ and (3) *pension trusts*, under which trust funds are set up by businesses for the payment of retirement and other benefits to employees.⁷

Other types of personal trusts include: sheltering trusts, for example, by parents to ensure the support of their children; spendthrift trusts, to protect improvident beneficiaries from their lack of responsibility in money matters; and charitable trusts, including those for religious, educational, literary or scientific purposes. Only public trusts may be created in perpetuity; all others are limited in duration.

Most personal trusts call for active investment management by the trustee. The terms of the trust instrument govern. "Legal" trusts restrict investments to those designated by the state law. Discretionary trusts leave the manner in which the trust estate is to be invested to the judgment of the trustee. Legal investment lists generally coincide roughly with those permitted savings banks. In states such as Massachusetts which have no legal list of investments, the trustee is required to follow the same policy as a prudent man would follow in investing his own funds under the given circumstances. As a result of decreased bond yields, increased taxes, and increased costs of trust administration, by 1950, twenty-five states had come to adopt the prudent-man rule by statute or judicial deci-

⁶ In unfunded trusts the creator pays the premiums, whereas in funded or partially funded trusts the premiums are paid in whole or in part from the income on securities also deposited with the trustee.

⁷ In a self-funded trust the trustee invests the assets and keeps the record of contributions and specific participations of beneficiaries. Under an insured trust it purchases individual annuity contracts for each employee with sums deposited by the employer.

sion, either for all or part of the otherwise restricted trust funds. In any event, diligence and prudence are required of a trustee, and he may be surcharged by the court for losses due to his deficiency in either respect. Each trust is a separate unit with a separate portfolio. Common trust funds and mortgage funds are permitted, however. In them, a number of small trusts participate in both assets and income in order to achieve diversification, facilitate efficiency and reduce cost of management, and yield a more stable income. They resemble mutual open-end investment funds, confined to the patrons of a single trust institution. In 1950, thirty-four states permitted operation of common trust funds; national banks must first obtain the approval of the Board of Governors of the Federal Reserve System and operate under its regulations. With the relative decrease in large estates accompanying the redistribution of wealth that has been under way in the United States, the common or commingled trust fund is expected to assume increasing importance.

Besides settling estates and administering trusts, trust institutions offer various agency services to individuals. They act as agent for trustees and executors in handling the mechanical phases of their duties. Again, trust institutions may act as custodian in the physical care and handling of securities, and in this connection may give investment advice. Finally, they may act as escrow agent, safe-keeping something of value that is to be delivered to another party upon the happening of some contingency.

SERVICES TO CORPORATIONS

Trust departments, especially in the larger centers, also render both trust and agency services to corporations, which are of great importance in connection with their security issues.

The principal corporate trust function is to act as *trustee under the indenture or mortgage* securing a bond issue. The trust department cooperates in drafting the indenture, and it authenticates each bond. During the life of the bonds, on behalf of the many widely scattered bondholders, it watches for any breach of the agreement by the issuer, serves notice of a breach on the issuer, and, if not remedied, may start an action to protect the bondholders. The performance of its duties is governed by the Trust Indenture Act of 1939, enacted to correct inadequacies disclosed by the SEC's earlier investigation. The act requires filing by corporations, with certain exceptions, of their indentures with the Commission, appointment of responsible independent trustees, and prescribes their duties towards bondholders.

Agency functions for corporations take several principal forms. A *transfer agent* keeps a record of transfers of the ownership of stock, issuing new certificates and canceling the old ones. A *registrar* prevents overissue of shares by keeping a record of the issued and outstanding shares. His duty is primarily to the public, whereas the transfer agent serves the corporation. Stock exchanges now have a general rule, dating in New York from 1869, that listed shares must be registered with an agent not connected with the issuer, who countersigns the certificates transferred by the transfer agent. For bonds, the trustee usually also acts as registrar, but notes the name of the holder and the date on the existing bond instead of countersigning a new certificate issued by the transfer agent. A *fiscal agent* relieves a corporation of clerical work in keeping records, drawing checks, etc. For example, trust departments may act as agent for paying bond interest and principal of maturing obligations and as agent for sinking fund on bonds and preferred stock. They also act as dividend paying agent (usually performed by transfer agents since they keep the list of stockholders). They may act as depository and exchange agent in exchanging new securities for old. In some cases, trust institutions have been appointed receiver of a business by a court. They operate it temporarily, pending either reorganization or appointment of a trustee or liquidator.

QUESTIONS AND PROBLEMS

1. a. Relate the growing institutionalization of investment in the United States to underlying economic and social changes.
b. Appraise the resulting advantages and disadvantages.
2. Contrast the mutual savings bank, the mutual fund, and the trust institution with reference to
 - a. Field of service to the saver.
 - b. Investment problems faced.
3. a. If savings banks and thrift departments reserve the right to require notice of withdrawal, need their assets be liquid?
b. Since neither makes use of its privilege of delaying withdrawals, do they not treat their deposits as demand deposits, and should they not be required to keep as high reserves as commercial banks do against checking accounts?
4. a. What is the purpose of a legal list of investments? Does it fulfill this purpose? Explain.
b. Contrast the present investment policies and problems of mutual savings banks and life insurance companies.
5. Evaluate the economic functions of the Postal Savings System since the institution of federal deposit insurance and the offering of United States savings bonds.

6. a. Account for the present popularity of mutual investment funds.
b. When a closed-end trust repurchased its shares in the market at less than their break-up value, who gained and who lost?
c. Who benefited from the net losses of nearly one third of the original capital investment in management investment trusts by the close of 1935 reported by the SEC? In what ways?
7. Investment counsel maintain that their primary function is to "render to clients, on a personal basis, competent, unbiased, and continuous advice regarding the sound management of their investments."
a. How can you select a reliable investment counsel? Would you prefer an independent concern or a securities dealer?
b. How does the economic service of the investment counsel differ from that of the investment trust? Is the service the same for different economic strata in the community?
8. a. The growth of trust business was very slow until 1885 and very rapid between 1900 and 1915. What reasons can you give?
b. Why is trust business confined largely to metropolitan communities and the wealthier states? What type of trust is most important in less densely settled communities? Why?
c. If all property must be transferred sooner or later because of the death of successive owners, and every transfer requires fiduciary services, what is the effect of the increase in life expectancy on trust business?
9. a. What principal trust and agency services is a trust institution prepared to render to a business concern?
b. When a businessman retires, what are the principal trust and agency services that a trust institution is prepared to render to him?
c. Should the trust institution under any conditions be permitted to mingle his funds with its own? With those of other trusts?
10. In view of their responsibility to those who place funds with them, and their increased responsibility in recent years to the community as a source of capital, should mutual savings banks, life insurance companies and trust institutions now be permitted to purchase common stocks? Would you differentiate between these three institutions? Explain.

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CHAPTER 30

Urban Mortgage Credit and Agricultural Credit

IN CHAPTER 16 it was noted that \$58.5 billion of the 1951 GNP of \$329.2 billion represented gross private domestic investment. Of this amount, new construction accounted for \$23.2 billion and was almost equally divided between residential non-farm and other uses. Thus, new construction plays an important part in capital formation.

Real estate finance, because of its distinctive features, has always been a specialized sector of the capital markets. Because of the cost, credit is used extensively to acquire real property and the mortgage has been developed to furnish the needed security. Many specialized institutions have evolved to aid in translating savings into real investment and thus to assist in capital formation in this area. There is, in fact, a further substantial institutional differentiation between urban and farm finance, in view of the special problems applicable to each. Farm finance also requires institutions to provide its short-term and intermediate credit needs, which are more extensive than its long-term mortgage credit needs. Today the most influential factors in both urban and farm real estate finance are the organizations set up by the federal government to insure ample financing facilities.

Real estate finance has the following characteristics:

1. Basically, it involves investment credit, with repayment possible only over a long period of time. The earlier practice of

lending for 5 years or less, or on demand has disappeared. It has properly given way to the 20- to 35-year loan, calling for amortization payments to reduce principal at least as rapidly as depreciation and obsolescence reduce the value of the property and the income derived from it.

2. It is based on the mortgage given by the borrowing mortgagor to the lending mortgagee. The contract (the mortgage) usually requires the mortgagor to pay interest and principal promptly, to pay all property taxes and special assessments, to maintain the property in good condition, and to provide insurance. In event of default, the mortgagor's "bond" or promise to pay becomes due and payable at once, and the mortgagee may proceed to foreclose upon the property.
3. Mortgages are not standardized, since each covers a specific piece of property that requires a separate appraisal of its value. Most are also small. Hence, the markets for mortgages tend to be local, with limited opportunity to dispose of them before maturity. However, both private institutions and federal agencies have made progress in broadening the market for such instruments.

■ URBAN REAL ESTATE FINANCE

Urban real estate finance involves two basic classes of property—residences for personal occupancy and income-producing property, including business buildings (factories, offices, and stores), hotels, clubs and churches, and apartment buildings. Many owners of income-producing property use the corporate form of organization, often incorporating each piece of property separately.

Many individual and institutional lenders engage in urban real estate finance. A bird's-eye view of the holders of the nonfarm mortgage debt is given in Table 70. The data also show that home ownership had absorbed more than twice as much mortgage money as had rental property.

Individuals are the largest single source of funds. They represent both private investors who often place their funds in mortgages on properties in their home communities and sellers who take back from the buyer a mortgage on the property sold. Institutional investors, including life insurance companies, trust institutions, and mutual savings banks are restricted by law to relatively conservative mortgage lending. However, they have long invested heavily in mortgages because of their relatively attractive yield in contrast to the yield of their legally permitted security investments. In recent

TABLE 70

NONFARM MORTGAGE DEBT, BY LENDER GROUPS,
DECEMBER 31, 1951
(000,000 omitted)

	1-4 family residential	Multiple family residential and commercial
Commercial banks	\$10,850	\$ 3,378
Mutual savings banks	4,638	5,231
Savings and loan associations	15,515	
Life insurance carriers	10,814	7,169
Individuals and others	12,700	8,000
Total	\$54,017	\$23,778

NOTE: The data exclude real estate mortgage bonds, also multifamily and commercial property mortgages owed by corporations and held by other nonfinancial corporations.

SOURCE: U. S. Department of Commerce, *Survey of Current Business* (September 1952), p. 14.

years commercial banks have increased their mortgage holdings markedly in view of limited alternative outlets for funds. Purchases by them and by institutional investors have been stimulated by FHA (Federal Housing Administration) mortgage insurance and VA (Veterans' Administration) mortgage guarantees.

While a large proportion of the mortgage loans granted in the United States has been arranged by direct negotiation between borrower and lender, several types of middlemen function in the mortgage markets. Real estate brokers often assist in negotiating mortgage loans in order to effect sales, while attorneys frequently arrange loans between their clients and lending institutions. Mortgage brokers and commercial banks often find desirable mortgage investments for institutional investors. Frequently, they arrange to service these loans for an annual fee. Prior to 1930 mortgage companies played an important role. They operated in several ways: by purchasing mortgages and reselling them to single investors, by selling participations in a single mortgage deposited with a trustee, or by issuing their own collateral trust obligations, secured by a group of mortgages deposited with a trustee. In most cases, payment of principal and interest of the mortgages or obligations was guaranteed for an annual fee by an independent or affiliated surety com-

pany. The widespread defaults on real estate mortgages in the 1930's incident to the collapse of the real estate market revealed that surety companies had undertaken guarantees far exceeding their financial ability. The resulting failures discredited the guaranteed mortgage business.

SAVINGS AND LOAN ASSOCIATIONS

The leading specialized urban mortgage lender is the savings and loan association. These associations are nonprofit mortgage banking institutions designed both to encourage thrift and promote home ownership. Dating back in the United States to 1831, they are an outgrowth of the British building societies of the late eighteenth century. Initially, they operated as cooperative clubs through which individuals interested in building homes pooled their savings and took turns in borrowing the necessary funds. Later they included nonborrowing members and substituted more formal and impersonal organization, with a full-time staff in place of part-time service by members. Prior to about 1930, they were commonly called building and loan associations. During the 1930's, the term savings and loan associations was adopted. Some states call the organizations cooperative banks or homestead associations.

In the United States the savings and loan associations have weathered two periods of difficulty—the 1890's and 1930's. In both cases, there was heavy mortality following rapid expansion in numbers and volume of assets. Although they are found in all states and are showing more rapid growth in the newer sections of the country, about one third of the associations with one quarter of the resources are found in three states—New Jersey, Ohio, and Pennsylvania. They may be chartered and supervised (with periodic reports and examinations) either by the state in which they operate or, since 1938, by the Home Loan Bank Board.¹ Over one quarter of the total number, with over half of the total assets, possess federal charters. More than half of these represent conversions of institutions that originally had been organized under state law. At the close of 1951 there were 5,980 associations with assets of \$19.2 billion. During the postwar period their assets increased more rapidly than those of other savings institutions, as a result of aggressive campaigns

¹ Before granting a charter, the Board must assure itself that the organizers have good character and are responsible; that the community needs an association; that the requirements for subscription and payment of share capital are met; that the association has reasonable prospects for successful operation, and that it will not materially injure another association already in operation.

for new accounts and the increased demands for mortgage credit associated with the high level of new residential construction.

Federal savings and loan procedure may be regarded as typical today. The capital of these associations is represented by nonassessable accounts which can be opened at any time and have neither a fixed maturity nor par value, but simply participate in earnings in proportion to the accumulated value of each account. This permanent plan of operations contrasts with the earlier plans used by state-chartered associations; the latter were the terminating plan, under which shares issued matured at a specified date, when the association was dissolved, and the serial plan, which admitted members in groups, each group constituting an independent series of shares with its own maturity date. Federal savings and loan accounts are of two classes. Savings accounts permit investment at regular or irregular intervals, while investment accounts are full paid in sums of \$100 or multiples thereof.² The latter may be represented by certificates instead of account books that resemble savings pass books. To stimulate systematic thrift, some associations employ bonus plans, under which savers who make monthly payments promptly over a period of from 5 to 15 years receive an additional return such as 1 percent per annum. To supplement funds received from savers, federal savings and loan associations may borrow from commercial banks and other sources. The borrowing may not exceed 10 percent of share capital from sources other than home loan banks, and 50 percent in all.

Federal savings and loan associations are managed by a board of from five to fifteen directors, approximately one third of whom are elected each year by the members for a 3-year term. Each member may cast one vote for each \$100 or fraction thereof in his account, and a borrowing member is entitled to one additional vote as a borrower. No member may cast more than fifty votes. A professional staff conducts day-to-day operations.

As is evident from Table 71, four fifths of the assets of savings and loan associations consist of loans on real estate. Federal savings and loan associations usually lend up to 80 percent of the value of the property being financed. Most loans run from 5 to 20 years and require monthly amortization. They represent first mortgages

² State-chartered associations, which in some states are permitted to receive deposits, commonly issue four types of shares: installment shares, calling for uniform payments (called "dues") at regular intervals; full-paid shares, prepaid shares sold at an estimated present value which, increased by dividends, will make the shares full paid at maturity; and optional shares, which permit payments irregular in amount and time. Some associations impose a penalty for withdrawal without notice, while some charge initiation and withdrawal fees and assess fines for delinquent payments on installment shares.

TABLE 71

PRINCIPAL ASSETS AND LIABILITIES OF SAVINGS AND LOAN ASSOCIATIONS,
DECEMBER 31, 1951
(000,000 omitted)

		Percent of total
Cash	\$ 1,065	5.6
U. S. Government obligations	1,607	8.4
First mortgage loans	15,596	81.4
Other assets	882	4.6
Total assets	<u>\$19,150</u>	100.0
Savings capital—private	\$16,079	84.0
Mortgage pledged shares	81	.4
Advances from federal home loan banks	799	4.2
Other borrowed money	82	.4
Other liabilities	660	3.4
Reserves and undivided profits	1,449	7.6
Total liabilities	<u>\$19,150</u>	100.0

SOURCE: Home Loan Bank Board.

for not more than \$20,000 on 1- to 4-family dwellings located within 50 miles of the head office. To a limited extent, first-mortgage loans may be made on other types of property or on nonlocal property, and larger loans may be made for a smaller percentage of the value of the property. Most state-chartered associations are limited to amortized first mortgages on homes and small apartments in the immediate and surrounding communities. FHA and VA loans running more than 20 years are also permitted. Amortized loans are on the direct reduction plan, under which the borrower's payments are applied directly to reduction of the loan, instead of, as formerly, to purchase of installment shares which, when fully paid, are tendered in payment of the loan. Loans may also be made to members up to 90 percent of the repurchasable value of their shares.

At the close of 1951, 14 percent of the total savings and loan assets were held in cash and United States Government obligations. The Home Loan Bank Board has emphasized the desirability of building up these liquid funds. Beginning January 1, 1952, the federal income tax was imposed at the regular corporate rate on undistributed

earnings, after allowance for building up surplus and reserves. What effect this may have upon savings and loan policies, remains to be seen.

Savings and loan associations have been strong competitors of the savings banks, both in mortgage lending and in attracting savings. Because of their higher yielding assets, they have been able to pay relatively high dividends to savers. At the close of 1951, reserves and undivided profits equaled 7.6 percent of total assets, and borrowings (largely from the Home Loan Banks) equaled another 4.6 percent. Shares are repurchasable from holders either at once or on 30 days' notice in order of application. A specified minimum proportion of all their cash receipts must be devoted to repurchase. Notice may be waived by federal associations on repurchases of \$100 or \$200 or less (depending on the type of charter), but when an association is limiting repayments, a single repurchase is limited to \$1,000, and the balance goes to the foot of the list of applications.

■ HOUSING AND HOME FINANCE AGENCY

Most of the government institutions concerned with urban real estate finance are concentrated in the Housing and Home Finance Agency. This body was established in 1947. It is headed by an administrator and has four constituents—the Home Loan Bank Board, the Commissioner of the Federal Housing Administration, the Commissioner of the Public Housing Administration, and since 1950, the board of directors of the Federal National Mortgage Association. All are appointed by the President with the approval of the Senate. The Home Loan Bank Board has jurisdiction over the federal home loan banks, the Federal Savings and Loan Insurance Corporation, and, until it was liquidated, the Home Owners' Loan Corporation. Broadly stated, these organizations seek to encourage residential construction by providing:

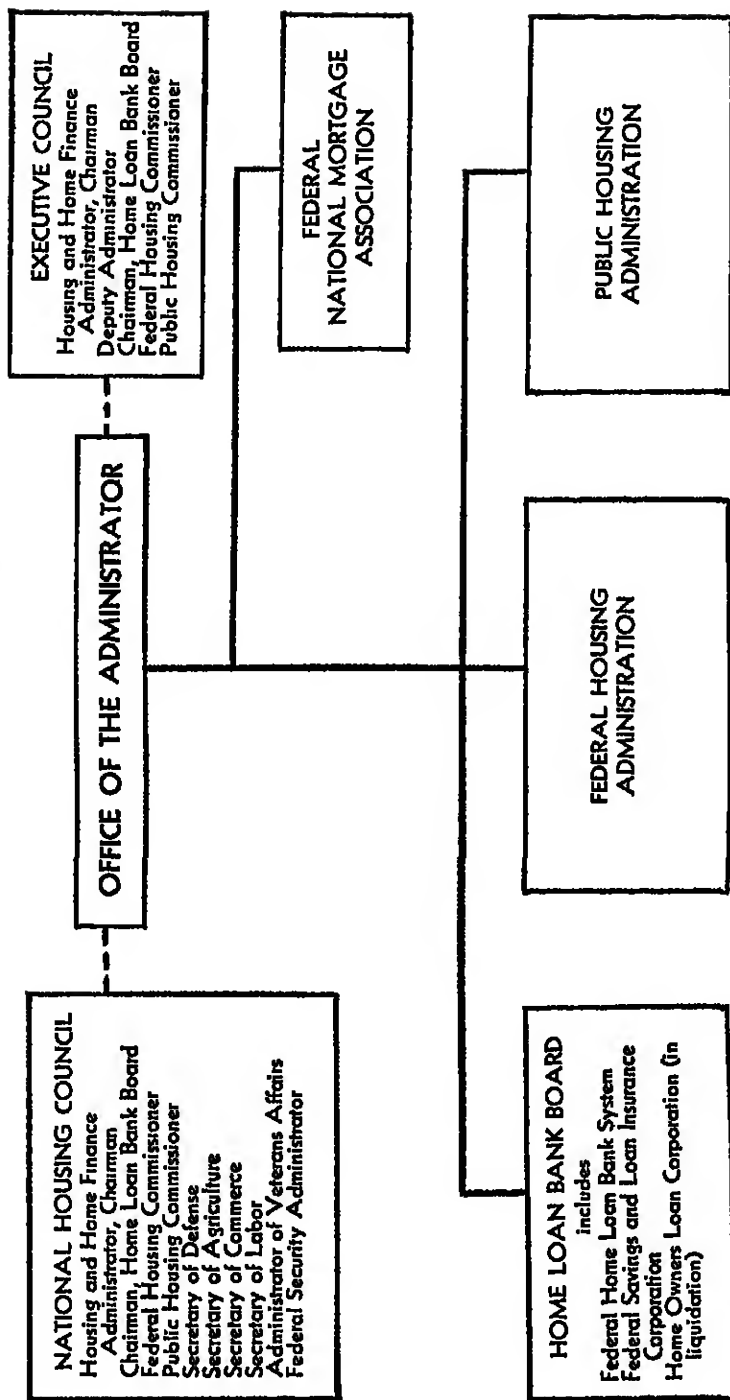
1. "Rediscount" facilities (home loan banks) and a secondary market (FNMA) for loans.
2. Insurance of loans (FHA).
3. Insurance of share accounts in savings and loan associations (FSLIC).
4. Direct loans and grants (PHA).

FEDERAL HOME LOAN BANKS

The Federal Home Loan Bank Act of 1932 provided a group of "rediscount" institutions in the field of urban real estate

FIGURE 64

HOUSING AND HOME FINANCE AGENCY



finance. To oversee the regional home loan banks, the act created a Home Loan Bank Board, composed of three members who serve staggered terms of 4 years. This body supervises the home loan banks and their members, charters and supervises federal savings and loan associations, directs the affairs of the Federal Savings and Loan Insurance Corporation, and until its dissolution, those of the HOLC (Home Owners' Loan Corporation). The act authorized that the country be divided into from eight to twelve districts, in each of which a federal home loan bank was to be located. Originally twelve were set up, but in 1946 the number was reduced by consolidation to eleven. Each bank has a board of twelve directors, four chosen by the Board for 4-year terms and eight by the member institutions for 2-year terms. The Board designates the chairman and vice-chairman, while the directors select the president, subject to the Board's approval.

The minimum capital of each home loan bank was originally set at \$5 million. The Treasury purchased the original aggregate capital stock at \$125 million, which was to be retired as stock was purchased by member institutions. Repayment was completed in July 1951. Members own stock of the district bank equals to 2 percent of the unpaid principal of their home mortgage loans, with a minimum of \$500.^a From an initial amount of \$9 million, stock holdings of members had risen to \$270.7 million at the close of 1951, as shown in Table 72.

TABLE 72

PRINCIPAL ASSETS AND LIABILITIES OF THE FEDERAL HOME LOAN BANKS,
DECEMBER 31, 1951

(000,000 omitted)

Cash	\$ 35.9	Deposits	\$ 261.7
U. S. Government securities	249.5	Consolidated obligations	524.5
Advances	805.9	Other liabilities	7.1
Other assets	4.0	Paid-in capital stock— members	270.7
		Earned surplus	31.8
Total assets	<u>\$1,095.3</u>	Total liabilities	<u>\$1,095.3</u>

SOURCE: Home Loan Bank Board.

The banks have two principal additional sources of funds. First, members keep time and demand deposits with them, and the Treas-

^a An institution not permitted by state law to own stock deposits the amount with the home loan bank.

ury and other federal agencies may use them as depositaries. The banks may also make temporary deposits with one another. Second, the banks are authorized, with the Board's approval, to issue bonds and other evidences of indebtedness. In practice, consolidated debentures have been sold to institutional investors as the joint and several obligations of the eleven banks. Outstanding at the close of 1951 in the amount of \$525 million, they are not guaranteed by the government. To provide funds when money markets are unfavorable, the Treasury may invest up to \$1 billion in home loan bank obligations, but it has made no purchases to date.

All federal savings and loan associations must be members of their district home loan bank. Qualified state-chartered institutions engaged in real estate mortgage finance may join voluntarily. At the close of 1951 the 3,930 members, with assets of \$17.9 billion, consisted of 3,894 savings and loan associations, 29 mutual savings banks, and 7 insurance companies.

The home loan banks do not lend directly to individuals but confine their loans to their members. They do not technically rediscount individual mortgages for their members, but grant long- and short-term advances to these members on terms approved by the Board. Long-term advances may not exceed 10 years and must be secured by mortgages on residential property or United States direct or fully guaranteed obligations, as well as by the member's home loan bank stock. They generally call for repayment in monthly or quarterly installments. Unsecured short-term advances are of two types. Members whose liabilities to others than the home loan banks do not exceed 5 percent of their assets may borrow for periods not exceeding 1 year; those whose liabilities are greater may borrow for not more than 30 days. However, advances that involve renewal of the debt must be secured. At the close of 1951 one fourth of the advances were unsecured. Over half the total membership were borrowers.

SAVINGS AND LOAN INSURANCE

As a result of their financial difficulties in the early 1930's, savings and loan associations now have insurance for their accounts. In 1934 the Federal Savings and Loan Insurance Corporation was founded with a capital of \$100 million held by the Treasury and operated by the Home Loan Bank Board. The Corporation was required in 1950 to use half its annual net income after expenses and losses to retire Treasury-owned stock, but the Treasury is required to lend any needed funds up to \$750 million. All federal

savings and loan associations must, and approved state-chartered associations may, insure their accounts. The annual premium is now $\frac{1}{12}$ of 1 percent of aggregate liabilities. These premiums are to be charged as long as the Corporation's reserves are less than 5 percent of its insured accounts and creditor obligations. An additional assessment of equal amount may be made if needed to meet losses.

The maximum insurable for any individual is \$10,000. When an insured association is declared in default and ordered liquidated, the Corporation may elect either to pay off the insured portion of its accounts or to transfer them to another solvent association.⁴ Besides directly protecting holders of accounts, the Corporation may intervene to prevent closing and to rehabilitate associations which have closed. It may make loans and contributions to threatened associations, purchase some or all their assets, or arrange their merger with sound associations. It acts as receiver or conservator for all defaulted federal associations and may act in a similar capacity for state-chartered associations. In addition, it exercises general supervision over insured associations, keeping informed through annual reports and examinations by it or a satisfactory state regulatory body. The general practice of the Corporation has been to assume responsibility as soon as a federal association has reached a condition of insolvency.

At the close of 1951 the Corporation's assets of \$208.2 million consisted almost entirely of cash and United States Government obligations. It insured the \$13.7 billion accounts of 3,020 associations with \$1.2 billion of reserves and surplus.

HOME OWNERS' LOAN CORPORATION (HOLC)

Established in 1933, the HOLC was an emergency device designed to lend to home owners in danger of losing their properties through foreclosure and to prevent continued liquidation of real estate credit by lending institutions. It sought to help individuals unable to keep up payments on their mortgages because their income had been reduced temporarily or stopped entirely. It also helped institutions and other lenders which held defaulted mortgages, foreclosure of which would only further depress property values and reduce or wipe out the equity behind other mortgage loans.

⁴ Default means official determination by a court or public authority under which a conservator, receiver, or legal custodian is appointed for the purpose of liquidating the insured association. An association cannot be considered in default as long as it is using the required proportion of its cash receipts to repurchase proffered share accounts.

The HOLC took over the defaulted mortgage from the original lender, giving him readily salable bonds issued by itself and guaranteed by the government in exchange for the unpaid principal of the mortgage. The amount could not exceed 80 percent of the value of the property. Some lenders also received limited amounts of cash. The Corporation revised the terms of the mortgage, placing it on a low rate long-term amortized basis. The rate at first was 5 percent and later $4\frac{1}{2}$ percent, while the maturity was from 15 to 18 years. Thus the borrower's total monthly payments, covering both interest and amortization, were reduced to the generally manageable sum of \$7.91 per \$1,000 of loan. In some cases of extreme distress, no payments were required during the first 3 years. The HOLC also advanced cash to borrowers to pay taxes and repairs.

In 1936 the lending authority of the HOLC expired. Out of 1.9 million applications for \$6.2 billion, it granted 1 million loans for \$3.1 billion and made supplementary advances of \$400 million more. Of the loans, some \$2.7 billion went to former creditors in payment of debt due them, and 70 percent of this sum was received by financial institutions. Subsequently, the HOLC has been engaged in collecting interest and amortization on its outstanding loans, in selling good mortgages to private financial institutions, and in disposing of properties it had foreclosed. Early in 1951 it wound up its affairs with a small surplus after having repaid its initial capital of \$200 million and retired the \$3.5 billion of bonds it had issued.

FEDERAL HOUSING ADMINISTRATION (FHA)

The National Housing Act of 1934 created the FHA under an administrator appointed by the President with the consent of the Senate. In 1947 it became a principal constituent of the Housing and Home Finance Agency, with but little change in structure or function. It does not act as a lending agency; it provides that those risks in mortgage lending that cannot be controlled by scientific analysis and proper underwriting of each loan shall be assumed by a mutual mortgage insurance fund and the credit of the government. It insures mortgages on privately owned dwellings made and held by approved mortgagees, such as commercial banks, trust companies, savings banks, savings and loan associations, insurance companies, finance companies, and mortgage companies.

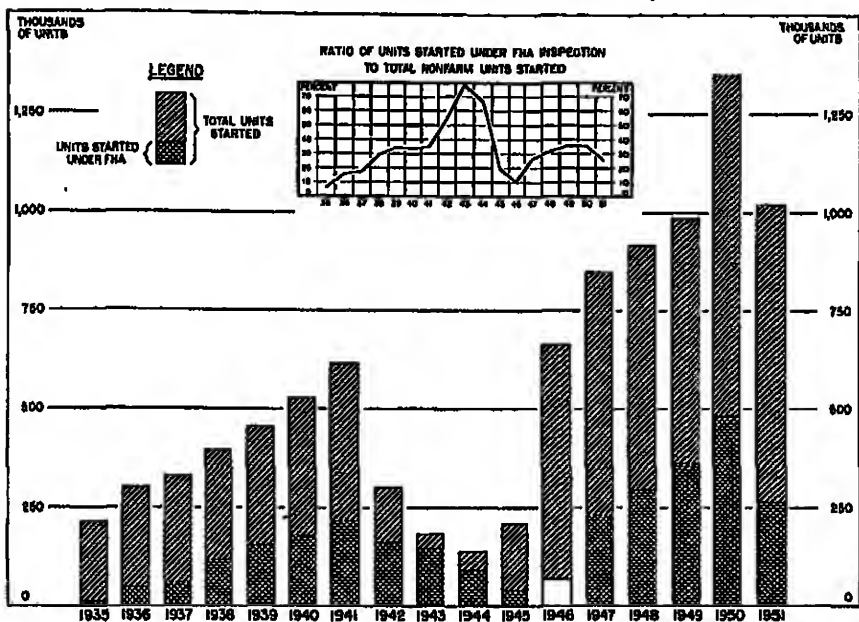
The significance of the FHA is several fold. First, for home construction and purchase it has released large sums which would probably otherwise have been withheld from the mortgage field. Second,

it has revolutionized home-financing methods. The old system involved a relatively short-term first mortgage for 50 to 60 percent of the value of the property, often followed by second and third mortgages. It called for high interest rates and renewal fees. The new pattern substitutes a single long-term mortgage for a large fraction of the property value. The loan also calls for amortization of principal and bears a low rate of interest. Third, it has set housing standards which must be met before insurance is granted. These standards have done much to improve methods and quality of construction and planning of residential districts. Fourth, it has emphasized the borrower's ability to meet his obligation, as well as stressing the value of his property. Finally, its activities have exerted a stabilizing influence in the mortgage market. In 1951, 26 percent of the total number of privately financed nonfarm dwelling units started were built with FHA insured financing. An active market in FHA mortgages has developed, with specialized brokers. During 1951 there were 185,000 insured mortgages totaling \$2,136 million resold to 2,087 purchasers.

FHA legislation has been changed frequently over the years. The subject is highly technical, and only the leading features can be indicated here. Title I was originally designed to provide unsecured credit to individuals for repairs, modernization, and improvement. These loans are generally limited to \$2,500 and 36 months. Section 8 was added in 1950 to provide for insured mortgages to finance extremely low-cost homes in suburban and outlying areas. Title VI was added as an emergency measure during World War II to quickly provide homes for defense workers in critical areas. Used during the period of rearmament as well as during the period of hostilities, it was revived after the close of the war to provide housing for returned veterans. Section 603 covered 1- to 4-family dwellings and section 608 rental projects. After the emergency ended, Title VI was allowed to lapse (1948 and 1950) except for those sections dealing with financing of prefabricated houses and loans to finance operative builders' large-scale construction of small homes. Titles VII, VIII, and IX have been added to provide yield insurance on rental housing, loans to finance rental housing for military personnel at or adjacent to military establishments, and loans to provide housing for workers moving to critical defense housing areas. Title II now covers both new construction and existing structures. It deals with insured loans on 1- to 4-family residences, loans on multifamily buildings for private investment, and loans to nonprofit cooperatives. An indication of the scope of activities to date, both those now being

FIGURE 65

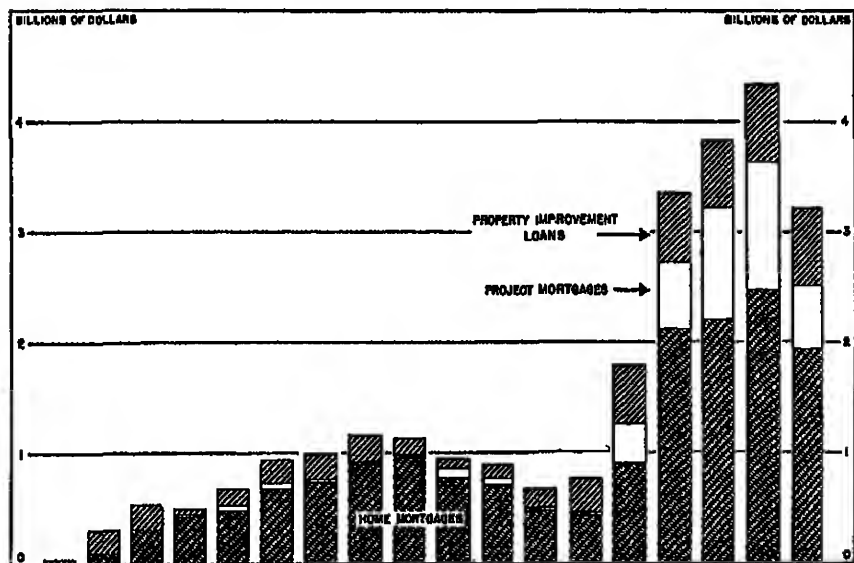
NEW DWELLING UNITS STARTED UNDER FHA INSPECTION AND TOTAL
NUMBER OF NONFARM DWELLING UNITS STARTED,* 1935-1951



* Based on total privately financed nonfarm dwelling units started as reported by the Bureau of Labor Statistics. SOURCE: Housing and Home Finance Agency.

FIGURE 66

YEARLY VOLUME OF FHA INSURANCE WRITTEN, 1934-1951



SOURCE: Housing and Home Finance Agency.

conducted and those which have been discontinued, is afforded by Table 78.

TABLE 78

STATUS OF FHA INSURANCE WRITTEN, DECEMBER 31, 1951

(000,000 omitted)

Type	Total insured	Terminated	In force	Estimated amortization	Net balance outstanding
Title I					
Sec. 2 (property improvement)	\$ 5,353	\$3,532	\$ 1,821	\$ 710	\$ 1,110
Sec. 3 (home mortgages)	30	"	30	"	29
Title II					
Sec. 203 (home mortgages)	12,812	4,444	8,368	898	7,500
Sec. 207 (rental & coop. projects)	220	143	77	8	71
Sec. 215 (coop housing)	78	2	76	"	76
Title VI					
Sec. 603 (home mortgages)	3,661	1,257	2,403	288	2,120
Sec. 608 (rental projects)	3,120	127	3,293	79	3,214
Sec. 609 (manufactured housing)	4	4	"	"	"
Sec. 611 (site fabricated)	10	3	7	"	7
Title VIII					
Sec. 803 (military housing)	341		341	"	340
Total	\$25,959	\$9,513	\$16,446	\$1,977	\$14,469

SOURCE: *Fifth Annual Report*, Housing and Home Finance Agency (1951), p. 225.

" Less than 0.5.

The principal activity of the FHA is the insurance, under Section 203 of Title II of the National Housing Act, of mortgages on both new and existing 1- to 4-family homes. To be acceptable, the mortgages must constitute first liens on properties that meet FHA minimum standards with respect to design, location, and marketability and must be executed by borrowers whose credit standings are acceptable to FHA. The following is a brief summary of the terms currently governing the FHA mortgage insurance programs:

1. A minimum down payment of 5 percent on an owner-occupant single-family dwelling carrying an FHA value of not to exceed \$7,000 if approved for mortgage insurance prior to the beginning of construction. If not approved before the beginning of construction the minimum statutory down payment would be 20 percent. The 5 percent down payments range upward for 1- to 4-family units, increasing as the valuation or acquisition cost of the property increases.

2. The maximum time allowed for paying off FHA insured mortgage loans is 25 years on houses valued at \$12,000 or less and 20 years for higher priced properties, except that the amortization term for management type cooperative project loans may be 40 years.
3. Maximum mortgage amounts range from \$14,000 for single-family dwellings to \$25,000 for structures containing 4 or more family units.
4. The maximum interest rate is $4\frac{1}{4}$ percent per annum and the mortgage is amortized by monthly payments covering interest, principal, FHA mortgage insurance premium computed at $\frac{1}{2}$ of 1 percent on annual outstanding balances of principal, fire and other hazard insurance premiums, real property taxes, special assessment and ground rents if any.

For multi-unit projects, the maximum FHA insured loan is for 90 percent per unit on the first \$7,000 of value, plus 60 percent on the value in excess of \$7,000. Also, the maximum insured loan on cooperative projects is 90 to 95 percent of replacement cost, depending on the proportion of veterans in the cooperative.

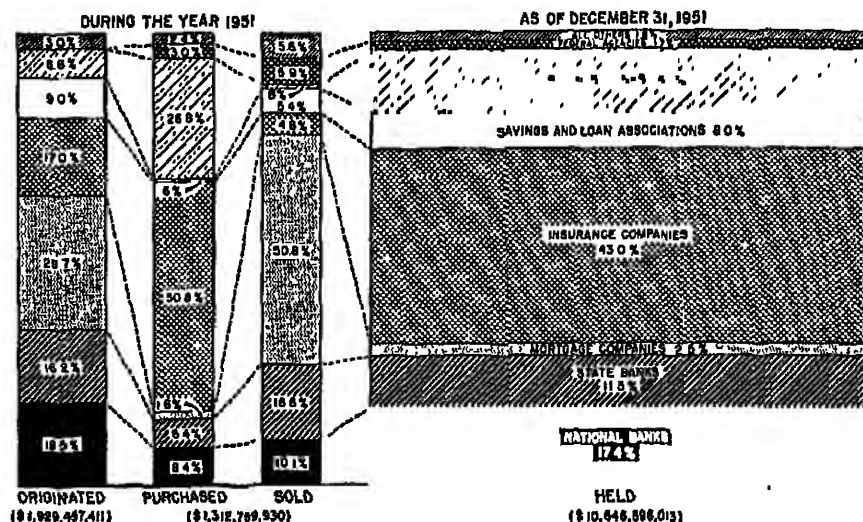
The FHA has created a series of funds to provide for losses in its various activities. These funds are derived from insurance premiums paid by borrowers and contributions by the federal government. At mid 1951, its capital and statutory reserves totaled \$275.3 million, including \$67.5 million contributed by the government and \$151.8 million in the Mutual Mortgage Insurance Fund. In addition to the latter fund, the credit of the government is pledged for payment of principal and interest of the debentures issued by the FHA in exchange for titles to real property (obtained through foreclosure of an insured mortgage or other authorized means) turned over to it. The debentures carry $2\frac{3}{4}$ percent where insurance was effected prior to May 15, 1950, and $2\frac{1}{2}$ percent if accepted thereafter. They mature 3 years after July 1 following the maturity date of the mortgage but are callable on 3 months' notice. Thus, the insurance enables the mortgagee to substitute a marketable government guaranteed obligation for the real estate acquired in satisfaction of the defaulted mortgage.

A mortgage is in default when the mortgagor fails to make any payment for 30 days or does not perform any other obligation under the mortgage. The lender must notify the FHA within 60 days thereafter. Within 1 year after default, the mortgagee must either acquire title to the property or start foreclosure proceedings. After foreclosure has been completed, the mortgagee may convey title

FIGURE 67

TYPE OF INSTITUTION ORIGINATING, TRANSFERRING, OR HOLDING FHA MORTGAGES

(Based on dollar amount)



Source: Housing and Home Finance Agency.

within 30 days to the Commissioner and receive debentures for the unpaid principal, plus taxes and insurance premiums advanced after date of default. In addition, the mortgagee receives a certificate of claim for foreclosure expense and all other sums due. This is payable with 3 percent per annum interest at the time of final sale and liquidation of the FHA's interest in the property, to the extent that the proceeds permit. The borrower receives any excess from the FHA. Should the mortgagee so desire, he may elect instead to hold the real estate himself. In this case, the insurance is terminated, and he receives for the benefit of the mortgagor a proper share of the group account to which the mortgage belonged.

PUBLIC HOUSING ADMINISTRATION (PHA)

The United States Public Housing Act of 1937 (as amended in 1947) is concerned with slum clearance and low-rent housing for low-income groups. The program is a joint federal and local undertaking. The locality, through a local housing authority, builds, owns, and operates low-rent housing projects. It makes the initial survey of local needs for low-rent housing, plans and con-

structs projects, selects tenants, and manages the completed housing. The federal government assists the local authority with temporary capital loans and annual cash contributions running up to 60 years. The subsidy supplements the rental income from the dwellings and enables the local authority to make up the difference between operating costs and the rents which low-income families can afford to pay. The projects are basically financed by long-term bond issues, running up to 40 years and sold to private sources. These projects raise a major social question; against the cost of the program to the taxpayer must be offset the decrease in social costs for crime and sickness associated with city slums.

At the close of 1951 the low-rent program included 405,000 units in 1,773 active projects, of which 211,000 in 769 projects were completed and in active use. During the war the agency was responsible for the bulk of the publicly financed war housing programs, and this program was continued for veterans in the postwar years. Of the 944,000 units developed by it under these emergency programs, 318,000 remained on its hands at the close of 1951.

■ OTHER AGENCIES

VETERANS' ADMINISTRATION (VA)

The Servicemen's Readjustment Act of 1944, as amended, provides the means for veterans to finance the building, acquisition or improvement of homes on extremely liberal credit terms. The Veterans' Administration, with the backing of the United States Treasury, may either guarantee or insure such loans made by private financial institutions. To December 25, 1951, over \$15.8 billion of loans had been made to veterans against residential property. The amount of guarantees in connection with such loans exceeded \$8 billion.

The law offers a guarantee for real estate loans made to qualified veterans up to \$7,500 or 60 percent of the total loan, whichever is less. The nature of the unusual guarantee is made clear when we consider what would happen in case of default and subsequent foreclosure of such a loan. Assume that the veteran buys a home without any down payment for \$12,500. If the property is sold in foreclosure for not less than \$5,000, the lending institution is reimbursed in full for the resulting loss by the VA under the VA's guaranty of \$7,500. (Incidentally, the VA's own loss equals the amount of its guaranty, less any sums it can collect from the veteran.) The lending institution could, therefore, safely lend the veteran the full purchase

In 1950 it was transferred to the Housing and Home Finance Agency. The FNMA buys at not more than par from private lenders FHA and VA mortgages not exceeding \$10,000 per single-family dwelling units; in general, not more than 50 percent of the total eligible loans granted by a single institution; and permits the seller to service the mortgage for a fee of $\frac{1}{2}$ of 1 percent per annum. In 1951 policies were oriented toward participation in a broad program to provide defense, disaster, and military housing. In that year the Association purchased mortgages equaling \$677 million, 89 percent of which were VA's, and sold mortgages equal to \$111 million, one quarter of which were FHA's. At the year end its portfolio totaled \$1,850 million, and it had outstanding commitments to purchase mortgages of \$239 million.

■ REGULATION OF URBAN MORTGAGE LENDING

The federal housing credit facilities described above tried to stimulate private lending by reducing risks and increasing marketability of housing credit. They tried to stimulate borrowing by providing funds on liberal terms. The PHA stepped into the low-income housing field which was unattractive to private investors.

In October 1950 the rise of the defense economy led to a program designed to curtail use of manpower and materials in construction, so that they could be diverted to rearmament projects. It was designed to help reduce inflationary pressures by restricting the flow of funds into the mortgage market. The program was intended specifically to reduce housing production in 1951 about one third below the current level of home building, or to not more than 800,000 units. The Defense Production Act empowered the President to regulate certain aspects of real estate finance, and he, in turn, by executive order delegated this authority to the Board of Governors of the Federal Reserve System and the Housing and Home Finance Administrator. The Board, with the concurrence of the Administrator, issued Regulation X setting credit restrictions on housing loans not insured, guaranteed, or extended by government agencies. The administrator announced companion restrictions on government-aided housing finance. The restrictions presented a further use of the plan of selective or qualitative credit controls previously employed in the securities and consumer credit fields.

At first the restrictions were confined to 1- to 2-family homes. They were successively extended to 3- to 4-family units, to multi-family and nonresidential housing, and to existing structures in

contrast to new construction.⁶ The restrictions included both minimum down payment and maximum maturity or amortization period and granted preference to veterans.

During World War II a pent-up demand for housing developed, due to the lag in new construction. This was accelerated after the close of hostilities by the return of veterans to civilian life, the increased rate of family formation (both in marriage and birth rates), and the desire to separate doubled-up families. New construction soared, as did construction costs and mortgage recordings. New construction reached \$18.6 billion in 1950, in contrast to \$3 billion in 1945 and \$7.7 billion in 1946. Meanwhile, construction costs rose about 60 percent between 1945 and 1950, while the nonfarm mortgage debt more than doubled, from \$31.7 billion in 1945 to \$68.4 in 1950. The number of privately financed dwelling unit starts rose from 208,000 in 1945 and 662,000 in 1946 to almost 1 billion in 1949, and to 1,352,000 in 1950. The effect of the real estate credit restriction begun in the autumn of 1950 was to reduce housing starts in 1951 to 1,094,000. As civilian demand slackened throughout the economy and the increase in defense spending lagged, the reduction in inflationary pressures caused widespread demand for the easing of credit curbs on real estate. This began in September 1951 and brought major easing in June 1952.

The Defense Production Act, as amended in 1952, provides that the President may impose residential down payment restrictions of no more than 5 percent (except where other statutes may require higher limits) when the annual rate of new nonfarm home building falls below 1,200,000 units for three consecutive months. When new nonfarm starts for the months of June, July, and August were determined to be less than the 1,200,000 annual rate specified in this legislation, Regulation X (which governed residential credit controls) was suspended on September 16, 1952, and the regulations relating to down payment requirements on home loans aided or made by the federal government were relaxed accordingly.

■ AGRICULTURAL CREDIT

The financing of agriculture did not become a major problem in the United States until World War I. Expanded output, increased land values, and heavier mortgage financing made the farmer vulnerable to the postwar slump in the prices of farm prod-

⁶ Real estate credit was also made subject to the Voluntary Credit Restraint program inaugurated in March 1951 and suspended in May 1952.

ucts. This series of misfortunes continued to plague farm operators until the mid 1930's. The period saw farmers using their political power to obtain two classes of remedies—a price-support program for farm products to stabilize farm incomes and specialized financial institutions under government auspices to provide needed credit.

The farmer's difficulties arose from the nature of his occupation. A farm is both a business enterprise and a home. It is normally a family venture that mingles the cost of operating the farm with the living expenses of the farm family, so production credit cannot easily be distinguished from consumer credit. The typical farm is still small in size, despite the application of expensive power machinery and the development of specialized commercial farming which must be "carried" between harvests. Therefore, the farmer is primarily dependent on local sources of funds and cannot easily tap the money markets in which funds are more plentiful. The risks of farming are great because of uncertain weather, insect pests, and other natural forces, as well as the inelastic demand (in the absence of government price guarantees) for most farm products. Therefore, a small increase in supply is accompanied by a sharp drop in price. Since agricultural land values reflect in heightened degree changes in the prices of agricultural products, purchasers in prosperous times frequently find themselves saddled with a heavy debt burden as prices and income decline.

Agricultural credit may be classified in three principal ways. Most significant is the distinction between *public* and *private*, an indication of the position achieved by the publicly sponsored lending agencies created as a result of pressure placed upon Congress by farm organizations. Another classification is by *time*. Short-term advances run 6 to 9 months or less; intermediate maturities from 9 months to 3 years; and long-term loans from 3 to 40 years. Finally, according to *purpose*, four classes of advances may be distinguished, one involving real estate (mortgage) credit and the others non real estate credit:

1. Land and permanent improvements such as buildings and drainage.
2. Machinery, farm and household equipment, and foundation livestock.
3. Operations, such as feeder livestock; fertilizer, feed, and seed; labor and family living expenses while making a crop.
4. Cooperative undertakings such as marketing products and purchasing supplies and services.

The scope of the farmer's financing needs, and the sources from which funds are obtained, are indicated in Table 74. At the close

TABLE 74
FARM DEBT, BY PRINCIPAL TYPES OF LENDER, JANUARY 1, 1952
(000,000 omitted)

	Real estate	Non real estate
<i>Private</i>		
Individuals and others, including merchants and dealers	\$2,534	\$3,200
Insured commercial banks	981	3,120
Life insurance companies	1,525	
Private financing institutions discounting with federal intermediate credit banks		78
<i>Public</i>		
Production credit associations		
Federal land banks	994	561
Federal Farm Mortgage Corporation	33	
Farmers Home Administration	233	312
Commodity Credit Corporation, loans and guarantees		578
	<u>\$6,300</u>	<u>\$7,849</u>

SOURCE: *Agricultural Finance Review* (Supplement, May 1952), pp. 2, 27, 35.

of 1951 the noncorporate farm debt totaled \$14,149 million, of which \$6,300 million was on farm mortgage and \$7,849 million was non-mortgage. These debts contrasted with assets of \$169 billion, of which \$15.2 billion represented deposits and currency and another \$5.3 billion consisted of United States savings bonds. Beginning with the aftermath of World War I and continuing through World War II, the farm mortgage debt was reduced from a peak of \$11 billion in 1922 to a low of less than \$5 billion in 1946, while the non real estate debt fell from \$4 billion in 1920 to \$1 billion in 1934 and \$3 billion in 1946. The declines reflected the impact of agricultural readjustment during the 1920's and 1930's, coupled with the institution of agricultural price supports in the 1930's. Since the early 1940's farm debt has risen again, mortgage debt rising one fourth and non real estate debt more than doubling.

PRIVATE SOURCES

The predominant role played by private in contrast to public agricultural credit is evident in Table 74. However, the table does not indicate some of the machinery in the federal system and the interrelations between the different parts of that system. Moreover, the system has influenced practice in the private sector, for example, the substitution of long-term amortized mortgages at moderate rates for the older plan of short-term mortgages carrying high interest and commission charges.

Well over one third of the total credit extended to farmers is granted by *individuals* and business concerns. They are the largest single source of both real estate and non real estate credit. Individuals holding farm mortgages include a large group of well-to-do people who favor real estate mortgages as investments and former land-owners who have sold property on terms calling for a down payment and a reduction of the balance by installment payments. Institutions such as schools, fraternal orders, and religious organizations also hold farm mortgages. Short-term credit is provided by merchants and dealers in groceries, feed, seed and fertilizer, farm implements, and other goods on open-book account or promissory note. This credit is usually costly as well as occasionally hazardous to merchants. It has declined with the development of financial institutions to render the service.

Commercial banks, located as the large majority are in towns with less than 10,000 population, also provide both real estate and non real estate credit. The volume of their mortgage loans is restricted because of the nature of their deposits. National banks are limited by law to the larger of paid-in capital plus unimpaired surplus or 60 percent of time and savings deposits. Except for insured or guaranteed loans, they cannot lend more than 50 percent of the value of the property on 5-year unamortized loans or 60 percent on 10-year loans providing for amortization of 40 percent of the principal. The list of investments eligible for trust funds, however, has always included first mortgages on improved real estate. While limited in holding their own funds in mortgages, many banks have arranged to sell or assign mortgages to life insurance companies. On their intermediate and short-term loans, banks often accept liens on live-stock, growing crops, and farm implements. They also make consumer loans secured by the item purchased, just as they do in urban centers; these loans are generally not included in the consumer credit statistics. The volume of short-term credit held by commercial banks

and merchants and dealers has tended to decline as federally sponsored agencies have grown.

A few specialized *livestock loan companies* serve as middlemen between eastern sources of funds and western cattle raisers. While some were independent, the larger companies were usually affiliated with a bank in a livestock marketing center. Great expansion occurred during and shortly after World War I in the number of companies and the volume of lending. These companies guaranteed the loans they placed, and many failed when livestock prices collapsed in the early 1920's. This, coupled with the development of other sources of such credit, led to dissolution of all but a very few of such companies.

Life insurance companies lend extensively on farm mortgages, but they tend to confine themselves to the best agricultural areas. They often acquire mortgages through local farm mortgage companies, brokers, and banks. The larger companies have built up extensive field organizations patterned on those of the mortgage companies.

An important intermediary between the lending institution or individual investor and the borrowing farmer has been the *farm mortgage company*. The few now in operation cover extensive areas by means of local branches or agents, who receive applications, investigate prospective borrowers, appraise properties, and report to the head office. The mortgage company commonly sells the loans it acquires or places these loans with a trustee to secure an issue of its own bonds, which is then sold to investors. The farm mortgage banker is compensated for placing the mortgage and retains the right to service it for an annual fee. Some mortgage companies issue certificates in various denominations, representing fractional shares in a specific mortgage.

FARM CREDIT ADMINISTRATION (FCA)

The federal system was created in 1916. The basic idea was to enable farmers to help themselves through cooperation. Starting with mortgage credit, it has expanded into a coordinated system covering all phases of agricultural credit. In 1933 the various agencies were consolidated in the Farm Credit Administration, which was placed under the Department of Agriculture in 1939.

The organization of the system is shown in Figure 68. It has two levels—a central office at Washington, D. C., and twelve district offices, each serving its own section of the country.⁶ The system has four constituents:

⁶ Boundaries of districts follow state lines and an attempt has been made to include diversified crop areas in each district.

1. *Land bank*, in which federal land banks make long-term first mortgage loans through national farm loan associations.
2. Production credit, in which *production credit corporations* supervise and furnish part of the capital for production credit associations which provide short-term credit.
3. *Cooperative bank*, in which banks for cooperatives lend to farmers cooperative purchasing, marketing and business service associations.
4. Intermediate credit, in which federal *intermediate credit banks*, by rediscounting, provide short-term funds for production credit associations, farm cooperatives, and other agricultural lenders.

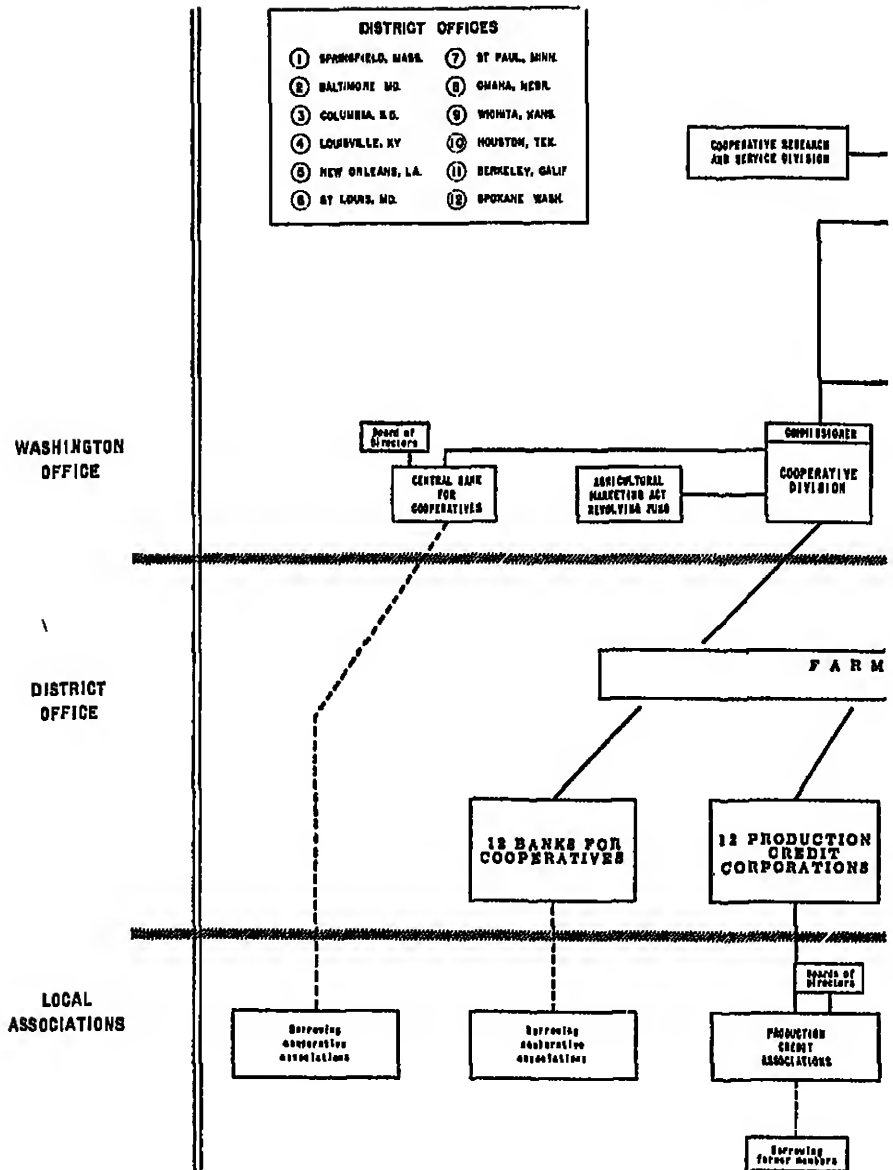
The system is partly governmentally and partly privately owned. The production credit corporations and the federal intermediate credit banks are wholly owned by the government. The federal land banks are entirely owned by farmer-borrowers through their national farm loan associations. The banks for cooperatives are owned partly by government and partly by the farm cooperatives that borrow from them.

The governor of the FCA and the four commissioners—one to supervise each of the constituents—are presidential appointees (subject to Senate approval). The former is appointed for a 6-year and the latter for indefinite terms. In each of the twelve districts the four constituent units maintain joint offices. The Farm Credit Board in each district has seven members. Four of them are appointed by the governor—one a director at large to represent the public interest and three district directors, one of whom is chosen from among three persons nominated by national farm loan associations. The three local directors are chosen, one each by national farm loan associations, production credit associations, and cooperatives who hold stock in the bank for cooperatives. All serve for 3-year terms. An advisory committee in each district is composed of the general agent and the presidents of the four district units.

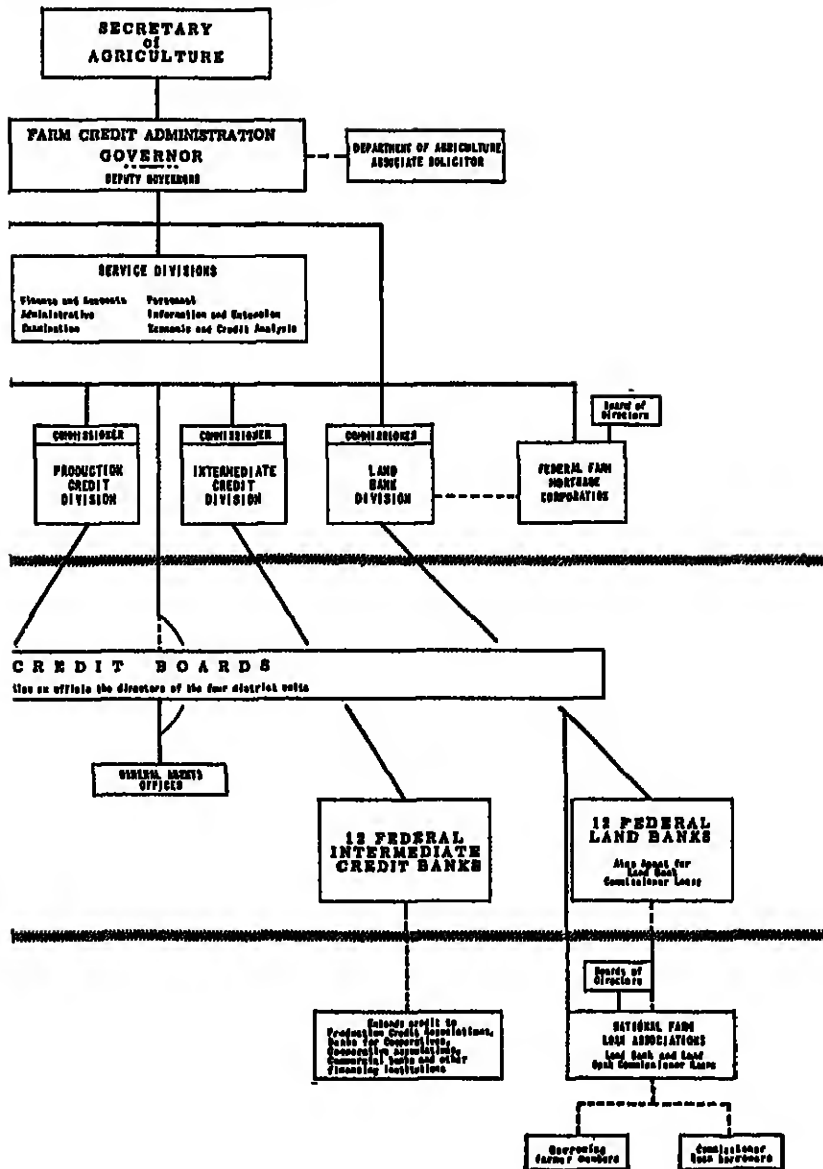
Federal Land Bank System The Federal Farm Loan Act of 1916 undertook to provide new sources of long-term low-cost mortgage credit. It tried to do this by pooling the mortgages of individual farmers and holding them as security for issues of tax exempt federal land bank bonds. It created twelve federal land banks to lend to farmers through local cooperative national farm loan associations.⁷ The initial capital of \$750,000 for each bank and the supplemental

⁷ Privately owned joint stock land banks were also provided, organized along mortgage banker lines, but all the 88 that were formed have ceased operations.

FIGURE
FARM CREDIT ADMINISTRATION



AND SUPERVISED AGENCIES



funds provided by the government during the depression were completely repaid by 1947. Hence, except for a small amount owned by farmers borrowing directly in sections where there were no associations, the capital stock (of \$5 par value) of the banks is now owned entirely by the national farm loan associations. The associations, in turn, have always been wholly owned by borrowing farmers.

National farm loan associations are formed by ten agriculturalists wishing to borrow \$20,000 and are chartered by the FCA on recommendation of the district federal land banks. Their stock is owned by the borrowers, who hold an amount equal to 5 percent of their loans. Unless defaults of other members have impaired the association's capital, the stock is retired when the loan is fully repaid. Each stockholder casts one vote in electing a board of five to seven directors, which in turn elects a secretary-treasurer in charge of the association's office. The association passes on loan applications, guarantees those accepted by the federal land bank, disburses the proceeds, makes collections, and otherwise services the loans. As loans are made, it purchases stock in the land bank equal to its own stock purchased by the borrower.

During the 1930's, more than one third of the 5,000 associations became impaired and insolvent. The federal land banks, therefore, undertook to reorganize and rehabilitate the system. By means both of financial support and of consolidation and readjustment of territories, they reduced the number of associations and their operating expenses. The land banks omitted payment of dividends on their own stock from 1931 to 1944. So did the associations, which were encouraged to build up a surplus reserve from net earnings in addition to the required legal reserve. All the 1,202 associations now in existence are solvent.

Federal land bank loans outstanding reached a peak of \$2,702 million in 1935. Since then, improved agricultural conditions, higher prices for agricultural land, and increased competition from private lenders has caused a decline to \$957 million at mid-1951. The loans are restricted in the following ways:

1. Borrowers must be farmers or ranchers.
2. The purpose must be to purchase land for agricultural uses; to buy equipment, fertilizer and livestock necessary for the reasonable and proper operation of the mortgaged farm; to provide buildings and improve farm land; to provide the owner of the mortgaged land with funds for general agricultural uses; or to liquidate debts of eligible borrowers incurred either at

least two years before the date of the loan application or for general agricultural purposes.

3. The minimum loan is \$100 and the maximum is \$100,000 but the approval of the land bank commissioner at Washington is required on loans exceeding \$25,000. Loans cannot exceed 65 percent of the appraised normal value of the farm for agricultural purposes (based on earning power and sale price of similar farms). The appraisal is made both by the association's loan committee and the land bank appraiser.
4. The minimum maturity is 5 years, the maximum 36 years, and amortization over the period is required, but 20 to 30 years is typical.

The rate charged the borrower by the association may not be more than 1 percent above the basic land bank rate. In 1951 this was generally 4 percent (4½ percent in two districts). The borrower pays recording charges and furnishes satisfactory evidence of title. Direct borrowers pay a rate ½ of 1 percent above the association rate.

The federal land banks provide mortgage credit at a rate equal to the cost of funds to them plus a margin for expenses and reserves. They tap the investment markets chiefly by issuing consolidated federal land bank bonds which are the joint and several obligations of the twelve banks but which carry no government guarantee of either principal or interest. The bonds are secured by placing an equal amount of loans or United States Government obligations with the district farm loan registrar. For short periods, the banks have also borrowed considerable sums from commercial banks and, on occasion, from the Federal Farm Mortgage Corporation. Their financial condition, as well as that of the other constituent bodies of the FCA, is shown in Table 75.

Production Credit System Following banking difficulties in agricultural areas in the 1920's and early 1930's, the Farm Credit Act of 1933 laid the foundations for a system of short-term agricultural credit. It set up twelve government-owned production credit corporations. These were to lend funds obtained from the federal intermediate credit banks through production credit associations ultimately owned as well as operated by borrowing farmers and ranchers. The government's initial capital investment of \$120 million was reduced to \$39 million by mid-1951, but the amount may be adjusted by the governor of the FCA to meet current requirements. The funds are used primarily to capitalize production credit associations in their respective districts. Associations with a minimum of ten borrowing farmers are chartered by the corporations with the approval of

TABLE 75

SELECTED ITEMS FROM STATEMENTS OF CONDITIONS OF CONSTITUENT UNITS OF THE FARM CREDIT
ADMINISTRATION, JUNE 30, 1951

(000 omitted)

	Federal land banks	Production credit corporations	Banks for coop- eratives	Federal intermediate credit banks	Number	National federal loan associations	Production credit corporations
	<i>Assets</i>					1,202	500
Net loans	\$ 956,984 ^a		\$309,383 ^a	\$794,633 ^b	Net loans		\$694,343
Cash	17,588	\$ 802	18,047	14,600	Cash	\$ 9,064	12,452
U. S. securities	81,823	41,883	43,276	46,176	Investments	36,879	119,276 ^a
A stock in production credit associations		12,657			Capital stock in federal land banks	61,387	
Total assets	\$1,068,233	\$55,740	\$376,956	\$862,445	Total assets	\$109,887	\$830,577
	<i>Liabilities</i>						
Consolidated debentures	\$ 714,787		\$ 30,000	\$742,570	Federal intermediate credit banks—rediscounts		\$614,182
Notes payable	37,801		91,775 ^a	10,350	Notes payable	\$ 61,382	49,266
Capital stock			16,355		Capital stock		
Private	61,508	\$39,235	178,500	60,000	A—production credit corporations		12,657
Government					—others		19,136
					B		57,959
Legal reserve	99,813		15,155		Legal reserve	8,959	54,426
Contingency reserve			6,415	13,075	Contingency reserve		
Earned surplus	123,952	16,201	37,348	27,349	Surplus reserve for losses	6,816	
Paid-in surplus				1,150	Surplus	27,629	
					Guaranty fund reserve		9,230
					Unapplied earnings		5,780

Sources: *Annual Report of the Farm Credit Administration, 1950-1951.*^a After reserve for losses: federal land banks, \$44,572; banks for cooperatives, \$1,891.^b To production credit associations, \$662,735; other financing institutions, \$88,883, banks for cooperatives, \$40,515; and cooperative associations, \$2,500. ^c Includes \$40,515 payable to federal intermediate credit banks. ^d Of this, \$39,530 owned subject to repurchase agreement.

the governor of the FCA and are subject to their supervision. At mid-1951 the 500 production credit associations had a capital of \$90 million; of this, \$13 million of Class A stock was held by the corporations and \$19 million by farmers, while the \$58 million of Class B stock had been acquired by the 465,000 members in connection with loans.^a Class A shares have preference as to assets but not dividends, while only Class B shares (which can be held only by those who have borrowed within the past two years) have voting power. Each holder has one vote regardless of the number of shares owned. Each borrower must hold stock equal to 5 percent of the amount of his loan. The associations generally have boards of directors of five members, with a loan committee composed of the secretary, treasurer, and two directors. In some cases they have joint offices and staffs with national farm loan associations, and the two organizations commonly perform services for each other. Production credit associations have over 1,000 branch offices and many other locations at which loan applications can be made.

The associations endeavor to provide complete short-term financing, covering planting, cultivating, harvesting and marketing of farm crops, production of livestock, acquisition of feed, seed, and machinery, repair of farm buildings, and refinancing of outstanding debts incurred for agricultural purposes. They lend on a budget plan covering a year's operations, with funds disbursed as needed and repaid when farm income is received. Loans may be for as little as \$50 and may run as long as 3 years, but generally mature within 1 year. They are usually secured by a chattel mortgage on crops, livestock, and equipment. No unsecured loan may exceed one fifth of an association's capital and surplus, while no secured loan may be more than one half without the approval of the district corporation and the production credit commissioner.

Associations invest their own capital in approved securities, chiefly those of the federal government. They obtain funds needed for lending by rediscounting their members' notes (with their endorsement) with their district federal intermediate credit banks or by borrowing directly from them. At mid-1951 such rediscounts were \$614 million and notes payable were \$49 million.

Production credit associations will not replace commercial banks, which provide checking account and other banking facilities. But many rural banks, especially in the midwestern farm belt, resent what they regard as unfair competition from associations able to

^a Over 85 percent, or 179 associations, were completely member-owned. The associations have generally built up their financial position instead of paying dividends to members.

offer low rates on funds made available through government borrowing. In the West, however, loans to ranchers are often too large for local banks, while in the South many loans are too small to attract private sources of credit.

Cooperative Bank System The Farm Credit Act of 1933 also provided financing facilities for eligible farm cooperatives.⁹ It established a Central Bank for Cooperatives and twelve district banks. The Central Bank usually serves cooperatives of national and broad regional scope, but it participates in many loans made by the district banks, and vice versa. Frequently the district banks also lend to one another. The capital stock was originally subscribed from balances remaining in the revolving fund of \$500 million with which the Farm Board was authorized to lend by the Agricultural Marketing Act of 1929; its amount now lies in the discretion of the governor of the FCA. The great bulk (\$178.5 million at mid-1951) is owned by the government. The balance (\$16.5 million) is owned by borrowing cooperatives which buy stock equal to 5 percent of operating capital and facility loans and 1 percent of commodity loans.¹⁰ Upon final payment of a loan, the stock is normally retired at par. The Central Bank, located in Washington, is operated by a board of seven directors composed of the cooperative bank commissioner as ex-officio chairman and six members appointed by the governor of the FCA, three of them from among persons nominated by borrowing cooperatives.

Practically all the loans are used directly in producing, processing, and marketing foods and fibers or to assist farmers in producing such products. The loans are of three general classes:¹¹

1. Commodity loans to provide funds to handle, sort, grade, and pack farm products. These are short-term advances secured by a first lien on the commodity being prepared for market and are usually repaid when it is sold.
2. Operating capital loans to supplement the funds supplied by the members of the cooperative and used to defray miscellaneous costs of operation. These are short- and medium-term advances generally secured by liens on real estate and inventories and are usually repaid at the close of the marketing period.

⁹ To be eligible, the cooperative must be operated for the mutual benefit of its members and do most of its business with them. It must limit each member to one vote and have 80 percent of voting rights held by producers, and must limit dividends to 8 percent a year.

¹⁰ Of the amounts, \$60 million and \$2.4 million, respectively, are in the Central Bank. Some borrowers make payments into the guaranty fund and do not buy stock.

¹¹ At mid-1951 the \$311 million of loans included commodity loans of \$80 million, operating capital loans of \$160 million, and facility loans of \$115 million.

3. Facility loans to construct or purchase warehouses, receiving or sorting stations and other physical facilities. These loans may have a maturity of 20 years but in practice seldom exceed 10 years and are usually repaid in annual installments. They are generally secured by a first mortgage on the facility and are limited to 60 percent of its appraised value. At mid-1951 the interest rates were $2\frac{1}{4}$ percent on commodity loans, 3 percent on operating capital loans, and 4 percent on facility loans.

In addition to using their own capital and borrowing from one another, the banks for cooperatives borrow from the federal intermediate credit banks and from commercial banks. They also sell interests in loans to other financial institutions. The Central Bank can issue debentures up to five times its paid-in capital and surplus. It first made use of this power in 1950, and at mid-1951 it had \$30 million outstanding. In practice, the volume of operations of the system has been limited by the government purchase and loan program for agricultural products through the Commodity Credit Corporation created in 1932. It should be noted, however, that the FCA at Washington conducts extensive research into the problems and practices of farm cooperatives in order to help them.

Intermediate Credit System The agricultural depression after World War I, with its freezing of short-term loans made by local commercial banks, led to the Agricultural Credits Act of 1923. This act created twelve federal intermediate credit banks, one in each land bank district, to rediscount paper maturing in less than 3 years for agricultural lenders. They were not to lend directly to farmers. Prior to 1933 much of the activity of the new system involved financing farmers cooperatives. Loans often provided that local banks take obligations with maturities up to 6 months and the intermediate credit banks take the longer maturities. The institutions' capital stock of \$60 million is owned by the government. They have a revolving fund of \$40 million on call. While the government receives no dividends on its stock, it is paid 25 percent of net earnings annually as a franchise tax.

The banks make collateral loans to farm lenders and discount farmers' notes with their endorsement. These lenders include production credit associations, the great bulk of whose financial needs they supply, as well as banks, agricultural credit, and livestock loan companies and other state-chartered financing institutions. The banks also lend to farmers cooperatives, as well as banks for cooperatives. To be eligible, the proceeds of the farmers' notes discounted or used as collateral must have been used in the first instance for an

agricultural purpose. Their maturity cannot exceed 8 years and ordinarily ranges from 3 months to 1 year. The lending institution also pledges a substantial portion of its own capital, usually in the form of United States Government or other approved bonds. Advances to commercial banks, added to their other liabilities, cannot exceed twice paid-in and unimpaired capital and surplus. To other financing institutions advances cannot exceed ten times this figure. The intermediate credit bank rediscount rate cannot be more than 1 percent higher than the rate at which they sell their debentures, while eligible notes cannot carry a rate more than 4 percent above the intermediate banks' rates. In 1951 the intermediate credit bank rates were $2\frac{1}{4}$ percent at some banks and $2\frac{1}{2}$ percent at others.

The intermediate credit banks finance themselves primarily by issuing consolidated debentures up to ten times their capital and surplus. The debentures are secured by deposit with the farm loan registrar of an equal amount of collateral. This consists primarily of obligations acquired in their loan and discount operations but also includes United States Government bonds and Federal Farm Mortgage Corporation bonds. The debentures cannot have a maturity greater than 5 years, but in practice are correlated with the banks' own loan maturities. In 1951 the debentures ran for 3, 5, and 9 months with an average interest cost of 1.97 percent. The intermediate credit banks may also borrow from each other and from commercial banks, besides having access (rarely used) to the RFC and, under regulations of the Board of Governors, to the Federal Reserve banks.

OTHER AGENCIES

Federal Farm Mortgage Corporation In 1934 the Federal Farm Mortgage Corporation was set up to provide supplemental high-risk farm mortgage credit. It served primarily to refinance mortgages already in or on the verge of default. Its loans were made in the name of the land bank commissioner, through the facilities of the federal land banks and national farm loan associations, often jointly with a federal land bank loan. They were limited to \$7,500 and were secured by a first or second mortgage up to 75 percent of the normal value of farm property, real or personal. The Corporation could also lend to the land banks and buy their bonds. Owned by the government, its capital of \$200 million (represented by land bank commissioner loans authorized in 1933 and taken over by it) could be supplemented by issue of up to \$2 billion of govern-

mentally guaranteed bonds. Its lending authority expired in 1947 and its assets equaled \$38.2 at mid-1951.

Agencies in the Department of Agriculture Within the Department of Agriculture but independent of the FCA are a number of other lending programs, which had their inception in the depression. In 1949 the Department of Agriculture absorbed the Agricultural Credit Corporation. In 1937 the latter had succeeded the twelve regional corporations which had been set up by the RFC in 1932 but had ceased lending generally in 1934 when the production credit system was organized. The lending activity of the Agricultural Credit Corporation has been confined to lending in emergency distressed areas in 1937 and 1941 and to aiding increased production of foods and fibers for the war effort. The Department of Agriculture also includes the *Rural Electrification Administration* created in 1935 by executive order. This body is authorized to lend to corporations, municipalities, and other public organizations as well as to power companies and individuals in order to finance the construction and operation of electric facilities in rural areas not otherwise served by existing utility companies. In 1949 the authority was extended to include telephone facilities. The loans may cover the entire cost of plant and line and may be amortized over 35 years at a rate of 2 percent.

The *Farmers Home Administration* of the Department of Agriculture was created in 1946 to consolidate various welfare and rehabilitation programs instituted as far back as 1933. These included the Farm Security Administration and the Emergency Crop and Feed Loan work of the FCA. Loans are made from appropriated funds to farmers, including tenants and sharecroppers, who cannot borrow elsewhere on reasonable terms. Loans are of several types: operating loans designed to increase production, elevate standards of farm practice, and enable purchase of livestock, supplies, and equipment; loans running up to 40 years and limited to \$12,000 enable purchase of family type farms or improvement or enlargement of farms to make them efficient family type units. Similar farm ownership loans made by private lenders are insured up to 90 percent of the investment in the farm. Veterans have preference for farm ownership loans. In seventeen western states loans are also made to install or repair water facilities. Guidance in farm management is provided as needed by the Farmers Home Administration. The borrower able to refinance on reasonable terms through responsible private sources is required to do so. In 1949 farm housing loans were authorized for a 4-year period.

The Commodity Credit Corporation, created in 1933, also operates within the Department of Agriculture. Its primary purpose is to peg or support prices of farm products and permit orderly marketing of crops in years when excessive production tends to undermine farm income. It does this by placing loan values on basic commodities under control programs, which often exceed the current market price. It may lend directly to farmers but usually makes advances in cooperation with local banks or lending agencies. The CCC agrees to buy the paper under certain conditions. If the price of the commodity falls below the loan value, the farmer allows the CCC to take over the product (which has been inspected and stored at the time it was pledged) as payment for the loan. In such cases, his 3 percent interest is waived. If the market price rises above the loan value, the farmer can sell the crop, repay the loan and interest, and keep the difference. Thus, he is guaranteed a minimum price for his product. In 1948 the loan plan was modified to grant the farmer an option (without cost to him) to deliver a stated maximum amount to the government between harvest and the beginning of the next crop. This avoids the necessity of loan applications and delivery of product to acceptable storage elevators or warehouses.

The CCC has a capital of \$100 million maintained at that figure if needed by the Treasury and can borrow \$6,750 million in obligations guaranteed by the government. Losses on the price-support program from October 1933 through January 1950 were \$483 million, but over-all losses resulting from related activities of the support and export programs, by subsidy and other payments, were \$2.3 billion. The plan is essentially not a financial program, but one of improving the welfare of an entire class of producers through policies designed to insulate that group from competitive markets.

QUESTIONS AND PROBLEMS

1. a. Contrast the share account in a savings and loan association with the savings account in a mutual savings bank and the thrift account in a commercial bank.
b. Compare the portfolios of savings and loan associations and mutual savings banks.
c. Compare the surplus position of savings and loan associations and mutual savings banks.
2. Compare the Federal Savings and Loan Insurance Corporation with the Federal Deposit Insurance Corporation as to ownership, coverage, premiums, nature of claims and methods of settling them, non-insurance functions, and financial strength.

3. a. "The Federal Home Loan Banks were set up in order to help financial institutions rather than home owners." What evidence can you cite to justify this statement?
 - b. Compare the federal home loan banks with the Federal Reserve banks as to organization, control, operation, and functions.
4. Among the most important reforms in home mortgage financing have been:
 - (1) Elimination of the second mortgage market.
 - (2) Provision for periodic repayment of principal.
 - (3) Basing of the mortgage on the long-term stabilized value of the property.
 - (4) Creation of a secondary mortgage market.
 - a. Explain the importance of each.
 - b. Does their existence mean that the present mortgage situation is sounder than that of the 1920's? Explain.
5. a. Contrast the protection to the lender under a section 203 FHA insured loan with that under a VA guaranteed loan on the same property.
 - b. A home is purchased for \$12,500, on which a lending institution would be willing to lend \$7,500 at its own risk. Explain why it could lend the entire purchase price (ignoring down payment) on a VA loan. If the loan defaulted immediately after being made and the property was sold for \$8,000 what loss would be incurred and by whom? If a conventional loan for \$7,500 had been made instead, what loss would have been incurred, and by whom?
6. a. "Unlike bank supervisory authorities, in its relation with federal savings and loan associations the Home Loan Bank Board has regarded itself as nursemaid rather than as supervisor." What evidence can you cite to justify this statement?
 - b. Is the spirit underlying the FHA and the PHA compatible with the conception of credit control and monetary policy?
7. a. Why did the federal government enter the farm mortgage field in 1916 while waiting until the great depression of the 1930's to enter the urban mortgage field?
 - b. Compare the role of the federal government in the urban mortgage and agricultural finance fields, including guarantees and subsidies provided.
8. a. Contrast the role of national farm loan associations with that of production credit associations.
 - b. Contrast the role of the federal land banks with that of the federal intermediate credit banks.
9. a. How could the Federal Farm Mortgage Corporation between 1934 and 1947 make a profit of \$105 million on its capital of \$200 million, when it took over refinancing of farm mortgages at a time when nearly one fourth of them had been foreclosed or were in process of foreclosure because of default?

- b. Contrast the program of the PHA with that of the Farmers Home Administration.
 - c. Why should loans of the CCC more accurately be termed "conditional purchases"?
10. Compare the economic and social effects of subsidized housing with those of subsidized agriculture.

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Consumer Credit

AS WAS observed earlier, the act of saving represents a diversion of the flow of spending for current output of goods and services. In the preceding chapters we described the operations of institutions which accumulate savings and distribute the funds to those engaged in adding to the stock of real capital in our country. The recipients of the funds are thereby enabled to bid for the productive factors freed by the act of savings. These institutions serve the useful purpose of restoring funds to the income stream by making them available to persons and institutions desiring to add to the productive capacity of their enterprises and thereby maintaining the volume of aggregate spending or national income.

If realized investment is less than planned savings—or as it is often loosely stated, all savings are not restored to the income stream by investments—aggregate spending and national income will decline. But income need not decline if consumers increase their purchases with new borrowing. As a result of increased consumer indebtedness, the demand for output as a whole increases. Thus, consumer credit by allowing consumer units to spend in excess of their current income serves to swell aggregate demand and hence income. When consumer indebtedness declines part of the consumer units' current income is not available for spending on current output and aggregate demand and income may decline.

Consumer credit is used to acquire goods and services for personal use rather than for productive employment. These goods may be durables, such as homes, automobiles, television sets or household equipment, or they may be soft goods, such as clothing or food. The services range all the way from medical and dental care and funerals

to vacations and education. Consumer credit, therefore, serves two distinct purposes. On the one hand, it makes possible immediate enjoyment of relatively high-cost goods, thereby enhancing the individual standard of living. On the other hand, it meets financial emergencies. Beginning as an aid for the poor, consumer credit institutions have placed growing emphasis on meeting the expanding credit needs of the middle- and lower-income groups who make up the largest segment of our highly industrialized urban society.

Without consumer credit the present structure of our economy would be impossible. Our high standard of living is explained in part by the large volume of consumer durables whose costs have been sharply reduced by mass production. Their mass markets, in turn, depend on consumer credit. Without consumer credit, for example, the automobile industry, the largest single peacetime user of steel, would probably be a fraction of its present size. On consumer credit depend the durable consumers' goods industries, which are such an important part of our present economic life. Their growth has gone hand in hand with the development of consumer credit.

Consumer credit differs from commercial credit in several important respects:

1. The amount involved in the average transaction is far smaller than the average loan granted for productive purposes.

2. The smaller average size makes for disproportionately heavy costs of operation. More work is required than on commercial loans, in investigation, bookkeeping, and collection. These costs do not vary greatly with the size of the loan; in fact, the smaller the amount, the greater the difficulty of securing information on the applicant. The result has been that consumer banking institutions can operate successfully only by charging much higher rates than those charged by commercial banks on business loans. Such charges must be exempted from the ordinary usury laws. Incidentally, the high cost of consumer credit is due not to a heavy incidence of bad debts but to the expenses involved in making and servicing these loans.

3. Repayment of consumer credit is based on income, but rarely directly increases the income-earning capacity of the debtor. This means that to a large extent it is self-perpetuating, new loans often being incurred to pay off old ones. It means also that the terms of the credit usually call for payment in periodic scheduled installments as income is received. Stability of employment and income of the borrower is therefore emphasized. Since consumer credit is repaid on an installment basis where the charge is not stated as a percentage of the actual balance outstanding, the true or effective rate is roughly double the discount charged on the initial obligation.

A simple formula commonly used for estimating the effective rate on an installment contract is:

$$i = \frac{2mc}{p(n+1)}$$

where i = the effective rate per annum (annual rate of simple interest).

m = the number of payment periods per year (12 monthly, 52 weekly).

c = the dollar cost of the credit.

p = the net dollar amount advanced.

n = the number of payments scheduled.

Thus on a contract to pay \$100 in monthly installments over a year, when a discount of \$6 is deducted for the financing charges, the true rate is roughly 11.78 percent, while a discount of \$3.33 represents a rate of 6.35 percent.

4. The volume of consumer credit is mainly a function of personal income, especially wages, with which it rises and falls. The income elasticity of demand for consumer durables and for loans to finance their purchase is greater than their price elasticity. This means that finance charges are a lesser consideration than the size of the monthly payment. The focal point for control of the volume of consumer credit, therefore, is the terms, both down payment and size of monthly payments.

There are two principal forms of consumer credit: sale credit and cash or loan credit. The consumer may borrow the sum in cash and disburse it; or he may acquire goods from the seller in return for a promise to pay part or all of the purchase price. Some financial institutions specialize in making cash loans. Others finance business concerns that sell on credit by taking over the buyer's obligation. Certain other organizations provide both cash and sale credit for consumers. The over-all growth of leading types of consumer credit since 1929 is shown in Table 76, which relates to credit originally extended for 5 years or less and omits real estate credit (treated in Chapter 30). The statistics include (1) installment cash loans, whether granted by commercial banks, industrial banks, personal finance companies, or credit unions, and single payment loans of commercial banks and pawnbrokers; and (2) installment sale credit, whether financed by merchants, sales finance companies, or other consumer credit institutions. The table also includes charge accounts and service credit, such as is granted by physicians and dentists. Ordinarily neither of these is specifically made the basis of special-

TABLE 76

SHORT-TERM CONSUMER CREDIT OUTSTANDING IN THE UNITED STATES
(000,000 omitted)

Close of year	Total	Installment cash loans	Single payment loans	Installment sales	Charge accounts	Service credit
1929	\$ 6,252	\$ 643	\$ 749	\$2,515	\$1,749	\$ 596
1933	3,439	466	303	1,122	1,081	467
1941	8,826	2,143	565	3,744	1,764	610
1945	5,627	1,422	510	942	1,981	772
1951	20,644	5,964	1,436	7,546	4,587	1,111

SOURCE: *Federal Reserve Bulletin*.

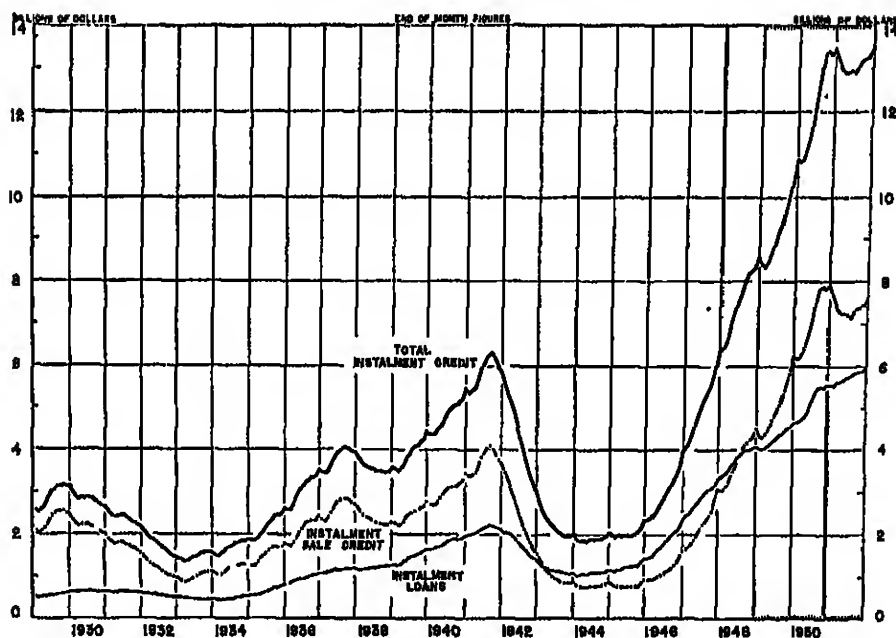
ized financing and is therefore not discussed here.¹ It will be observed that about two thirds of the total consists of installment in contrast to noninstallment credit, and that to an increasing extent cash credit is being used in lieu of sale credit.

The year 1910 may be taken as the approximate beginning of the new era in which specialized banking institutions developed to provide consumer credit. Prior to that time borrowing for consumption purposes was frowned upon. Individuals who needed to borrow for consumption were generally compelled to resort to pawnbrokers and unlicensed lenders, while installment buying was usually confined to inferior merchandise sold at excessive prices. The establishment of the Russell Sage Foundation in 1907 was a landmark in the development of institutional facilities for consumer credit. Out of its work grew the personal finance business conducted under the small loan law. The first American credit union was organized in 1909 and the first industrial bank in 1910. About 1915 the sales finance company began to assume importance, and in the 1920's commercial banks began to organize personal loan departments and thereby created a direct link between consumer credit and the money stock.

¹ Extended charge accounts, such as those which permit payment for clothing in installments over several months, resemble installment credit.

FIGURE 69

CONSUMER INSTALLMENT CREDIT OUTSTANDING
(Federal Reserve estimates)



SOURCE: Board of Governors of the Federal Reserve System.

PERSONAL FINANCE COMPANIES

Personal finance or small loan companies make cash loans of small amounts chiefly for consumption purposes. They conduct business under statutes designed to do away with "loan sharks" operating outside the law and charging all that the traffic will bear. These "small loan" statutes provide for the organization and regulation of lenders to meet the pressing financial needs of people of small means.² Massachusetts enacted the first modern small loan law

² Pawnbrokers are of small and shrinking importance. They either lend against security or purchase property with an agreement to resell within a designated time. The pledge is of personal chattels, usually small and fairly high-value objects with a ready resale value. The financially embarrassed as well as the poor are their patrons, while about one fourth of their loans are for business in contrast to personal purposes. Normally 85 percent of pledges are redeemed. The business is subject to legal regulation, mostly requiring state or local licensing, bonding, and supervision by the local police, and regulating practices and charges. Rates vary from 24 to 120 percent per annum, with 86 percent considered typical. Remedial loan associations have been organized along philanthropic lines. Most prominent is the Provident Loan Society of

in 1911. A campaign for such legislation was undertaken by the Russell Sage Foundation. On the basis of comprehensive studies, it prepared the first draft of a Uniform Small Loan Law in 1916. The draft was based on the idea that adequate loan facilities for the masses will be available only if lenders are freed from the restrictions of the usury laws, although rates and practices should be regulated and offices licensed. Revised from time to time, the seventh draft appeared in 1942. It has served as a model for most of the state laws now in effect, but variations are often as significant as are points of resemblance. In 1950 thirty states had such legislation, and seven others had laws that were dissimilar. The business doubled between 1929 and 1941, and more than doubled between 1941 and 1951, when the companies had installment loans of \$1,268 million outstanding at the end of the year.

Many individuals and partnerships as well as corporations conduct a personal loan business. A license is required for each office operated, but licenses are usually freely granted. Offices are found principally in industrial areas and in the larger cities, since patrons are chiefly wage and salaried workers. The greater part of the business is conducted by a few national organizations which operate chains of offices throughout the country or in specific regions. Because of dissimilar state laws, some of the larger companies prefer to establish subsidiaries in each state in which they operate. Each subsidiary, in turn, operates branches throughout its state. The Uniform Small Loan Law requires a minimum capital of \$20,000 for each office operated. The law further requires that specific records be kept, bonds provided, standard forms used, and that the books be open to examination by the state authorities. The companies lend their own capital, which they supplement by funds obtained from commercial banks and the commercial paper market.

Loans, repayable in installments, have maturities of from 5 to 24 months. While based on the borrower's income, most of the loans are secured. The security frequently consists of chattel mortgages on household furniture, automobiles, and other property. Wage assignments (permitted by the Uniform Small Loan Law to the extent of 10 percent of the borrower's wages) and comakers (third parties signing the note for the benefit of the borrower) are also found. Some loans, however, are made on the unsecured promise of the borrower.

Many small loan laws still limit a single customer's total loan with a finance company to \$800, the amount specified in the first draft of

New York, which operates as a pawnbroker, but some others operate under the small loan law.

the Uniform Law. With the general increase in prices, eleven states have raised the limit to \$500 or more. In certain states additional loans may be granted under other statutes.

The business is costly to conduct. Expenses are high on a percentage of loan volume, since the average size of loans probably does not exceed \$150 to \$200. The applicant is usually interviewed. A rapid credit investigation is made, partly by an "outside" man and partly by telephone, to verify the data contained in the application as to the purpose of the loan, outstanding indebtedness, income, living expenses, and means of repayment. When a loan is on the books, records must be kept of the small weekly or monthly payments and efforts made to keep delinquency as low as possible, while recognizing the social and human aspects of the business. Extension is necessary where an honest debtor loses his job, becomes ill, or otherwise is unable temporarily to meet payments, while adjustment of the debt may be required in more serious situations. At the same time, prompt payment is sought from those who can pay. Much of the business on the books is "repeat" business from satisfied customers who go into debt again. More than half the debtors increase their loan before completing the original payments, while others refinance in order to reduce the monthly payments. Losses are small because of the diligence displayed by the companies.

The Uniform Small Loan Law in its seventh draft permits a maximum rate of 3 percent per month on unpaid balances of \$100 or less and 2 percent on unpaid balances in excess of \$100. Certain states have reduced these rates; thus, New York permits 2½ percent on the first \$100 and 2 percent on the remainder. In general, no additional investigation fees or finance charges are permitted. Interest cannot be deducted in advance or compounded, while borrowers may repay at any time and are charged only for the time the loan is actually outstanding. The rate which lenders can charge for their loans must be high enough to ensure the flow of legitimate capital into the small loan business. Too low a rate drives out legitimate lenders and leaves loan sharks in operation.

■ CREDIT UNIONS

Credit unions are cooperative associations of people with common interests who pool their savings in order to lend to their members at low rates. The American credit union stems from nineteenth-century European cooperative credit institutions, but it is designed to provide funds for consumption rather than for production. In 1909 the first American credit union was organized

in Manchester, New Hampshire, and Massachusetts passed the first law authorizing the formation of credit unions. The movement gathered momentum after the Boston merchant-philanthropist E. A. Filene became interested, and the Credit Union National Extension Bureau was established to secure legislation in the various states and to aid directly in forming credit unions. By the fall of 1951 all but four states had passed laws, while in 1934 Congress had adopted the Federal Credit Union Act which provided for credit unions under federal auspices and promoted their organization.

At the close of 1951 there were 11,275 credit unions that reported to the United States Bureau of Labor Statistics, with 5.2 million members and loans outstanding of \$747.4 million. Of these, credit unions established under state law comprised slightly over half the total number of unions and members, but held almost three fifths the total loans outstanding. From 1936 through 1941 the movement showed extremely rapid growth; expansion was resumed in 1944. The figures on credit union loans outstanding indicate, however, that despite all the promotional effort made, the credit union plays but a small role in American consumer finance.

Credit unions succeed, as a whole, only when the members are drawn from an homogeneous group, closely associated by interests, residence, or, particularly, occupation. Among such groups are employees of a manufacturing plant or members of an office staff; members of a specific cooperative; members of a fraternal or religious group; and members of a labor union. The record of credit unions shows numerous instances where they have become inactive after having been in operation for a limited period. Either the interest of the members waned, the group was too small, or it was difficult to find officers to conduct affairs.

A minimum of fifty members is required for a federal charter, and similarly in most states. Each member must own at least one share, which generally has a par value of either \$5 or \$10, and may be purchased on installments. Regardless of the number of shares owned, each member has only one vote in electing officers and determining policies. Additional funds are obtained from the small entrance fees charged members, acceptance of deposits (where permitted by law), loans obtained from commercial banks or other financial institutions, and from earnings retained instead of paid out as dividends. The federal law permits borrowing up to 50 percent of capital and surplus, but this practice is rare.

In addition to officers, the federal law requires a board of at least three directors, a credit committee of three or more members to pass on loan applications, and an auditing committee of three members.

Regular offices are frequently not maintained, and officers usually serve without pay, except for a nominal amount paid the treasurer, who acts as manager. Thus, the credit union keeps down expenses while it trains its members in business methods and self-government.

Loans, made for a provident and constructive purpose, are usually confined to members, and they are repayable in weekly or monthly installments. Federal credit unions may make unsecured loans up to \$400, but loans in excess of that sum must be secured. Security is usually provided by comakers, although chattel mortgages and real property are frequently accepted. The borrower's shares in the credit union are customarily pledged as additional security. Federal credit unions cannot lend a single borrower more than \$200 or 10 percent of capital and surplus, whichever is larger.

Charges on loans are limited by the federal law and most state laws to 1 percent a month on the unpaid balance, and most credit unions charge this rate. Delinquency fines may be added to it. After payment of operating expenses, the income is used to set up reserves for losses and to pay dividends. Federal credit unions must set aside all entrance fees and fines and 20 percent of annual net earnings before dividends to a reserve for losses until it equals 10 percent of outstanding stock. Unlike savings banks and savings and loan associations, which endeavor to keep dividend rates steady, credit unions often vary them considerably from year to year.

■ SALES FINANCE COMPANIES

The sales finance company is principally engaged in financing the retail sale of durable consumers' goods, chiefly automobiles, to be paid for on the installment plan out of consumer income. Therefore, it supplies funds primarily to move goods from dealer to consumer, whereas the commercial finance company described in Chapter 10 finances their movement from manufacturer to merchant or from wholesaler to retailer.² The sales credit it extends is contrasted with the cash credit furnished to individuals by personal finance companies and other agencies. In any case, it stands basically as a specialized intermediary between the banks and the consumer, to supervise the credit which enables the individual to purchase the durable consumers' goods that he desires. A lesser part of its business is to finance installment sales of machinery and equipment to producers and to finance the inventories of automobile and other dealers.

² Many sales finance companies also act as commercial finance companies.

The sales finance company grew out of the commercial finance company. Its history, dating back actively to about 1915, has been coterminous with that of the automobile industry. Banks shunned untried automobile credits as involving excessive risks. The sales finance company provided a mass market for automobiles by adopting installment payments which were synchronized with the individual's income. It permitted automobile manufacturers and dealers to apply their limited capital to expanding the scale of their operations to meet increasing public demands for their product. Since the early 1920's, installment plans have been extended to other articles as well. Since the late 1920's, various finance companies have absorbed some leading textile factors. During the 1930's some have added various insurance activities and small (cash) loans and during World War II (when installment business was greatly restricted) one even acquired some manufacturing enterprises.

Sales finance companies may be classified in several ways. By degree of specialization, automobile finance companies may be distinguished from "mixed" finance companies which handle both automobile and other paper and "diversified" finance companies which confine themselves to other paper. By area of operation, the three large national companies (General Motors Acceptance Corporation, Commercial Credit Company, and C.I.T. Financial Corporation) may be differentiated from a somewhat larger number of regional companies and from numerous local companies. Finally, according to ownership, the factory-owned G.M.A.C. must be distinguished from factory-affiliated companies which have arranged with manufacturers to provide financing plans as aids to dealers, and from independent companies. At the instance of the Department of Justice the close relations between the larger automobile manufacturers and leading sales finance companies were severed just before World War II in order to give the automobile buyer greater freedom of choice in selecting a financing medium. The number of independent companies and their share of the volume of business have varied greatly over the years.

Despite the greatly increased interest of commercial banks and other lenders in financing installment sales, the sales finance company is still the dominant lender in the field. At the close of 1951, according to the Federal Reserve authorities, installment sale credit totaled \$7,546 million, with somewhat over half accounted for by automobile sales and the balance accounted for by other articles. About \$1,750 million (half of the \$3,507 million of nonautomobile credit) was financed by the sellers and the remainder by financial institutions. Late in 1950 the approximately 2,700 sales finance com-

panies in the United States held retail installment paper totaling about \$4 billion. Over three fourths of this, in turn, was automobile paper.

TECHNIQUE

Installment credits adapt the terms of payment to the buyer's income, while retaining a lien on the article sold. The sales finance company furnishes the dealer with forms and a rate chart. After the dealer has made an installment sale to his customer, the finance company buys the resulting paper from the dealer and collects directly from the buyer-debtor.

There are two basic elements in installment sales terms: the down payment and the length of the period over which payments are to be made. The down payment should be large enough to give the buyer a stake in his purchase and to absorb the initial depreciation on the article. In automobile sales the down payment is very often made by the trade-in of an older car, which fact tends to increase the size of the down payment. Payments must also be made more rapidly than the article wears out and loses its appeal to the buyer. Thus, the amount remaining unpaid must at all times be less than the usable value of the article and small enough to enable the buyer to complete his payments.⁴ While the finance company retains a lien on the article through the use of a conditional sale contract, it does not wish to repossess the article except as a last resort. The individual transactions and the units of service charge are so small that any interruption to mass production handling is costly. Consequently, emphasis is placed on the buyer's being a sound moral risk, having a steady job, and not being overburdened with too many debts requiring payment simultaneously.

The dealer may also assume some financial responsibility to the finance company. Under full recourse arrangements, he assumes the risk of bad debt losses and agrees to take back from the finance company any delinquent paper. This type of an arrangement is still quite common for consumer durables other than automobiles. Under nonrecourse arrangements the dealer has no liability and the finance company assumes all bad debt losses. There is an intermediate plan whereby dealer and finance company share the credit

⁴ Before Federal Reserve Regulation W was suspended on May 7, 1952, terms on new automobiles were restricted to a minimum down payment of one third and a maximum maturity of 18 months, on major appliances to 15 percent down and 18 months, and on home repairs and improvements to 10 percent and 36 months. Terms in actual use vary widely at different stages of the business cycle.

losses, with a limit on one or the other. The most common variant of this plan is a repurchase agreement which requires the dealer to buy back a repossessed article from a defaulted buyer for the amount remaining unpaid. Under this plan the finance company assumes responsibility when buyers "skip" with an automobile or have it confiscated by public authority because of use for illegal purposes.

The largest area of use for installment finance lies in the automobile field. The automobile is mobile as well as durable and possesses a wide market at a substantial resale value reasonably related to original cost. No other articles possess all these features in like degree. Nevertheless, installment finance is widely used for two other types of goods. Industrial equipment finance resembles bank term lending in the procedure followed and the analysis of the credit risk runs in terms of the resulting increase in income and efficiency of the purchaser. Consumer durables, such as the larger electrical appliances (refrigerators, washing machines, radios and television), also often employ installment finance. But the amounts involved in the sale of small electrical appliances, furniture, and clothing are too small for the overhead of the finance company, while the retailer is anxious for repeat trade. Hence, for these smaller items the retailer either carries the installment contracts himself or borrows against his portfolio of installment contracts, doing the collecting and bookkeeping himself and accounting to the lender.

Actual finance charges may be wholly or partly included in the price of the article. The quoted charge is usually stated as a percentage discount of the original amount. The charge has been reduced as finance companies have faced increasing competition from commercial banks. The buyer of the consumer durable is also required to maintain fire, theft, and collision insurance. The larger finance companies often have their own subsidiaries write the insurance through procedures integrated with the dealer's sale of cars. It is the common practice of the finance company to rebate to the dealer part of the charge paid by the buyer. However, the former practice of adding a "pack" to the charge has been largely discontinued. Critics favor a less ambiguous method of stating the charge and a separation of the components of the charge. Eleven states, including California and New York, now regulate financing practices by law.

"WHOLESALE" FINANCE

The rapid expansion of the automobile industry found manufacturers so hard pressed for capital that they required dealers to pay cash. Since the average dealer lacked sufficient funds to tie up in inventory, and the banks distrusted the automobile market, he turned to the company which financed his retail sales and let that company in turn borrow from the banks. Finance companies, therefore, developed a so-called "wholesale" plan, which has since been extended to other items, chiefly well-known home appliances handled through franchised dealers. They relieve the manufacturer of the financial burden of sales on credit by immediate payment for goods shipped. The dealer's investment in inventories is carried by the finance company until the goods are sold.

The automobile advance is represented by the dealer's note, running 1 to 6 months, and secured by a lien on the car. Under the customary "floor" plan, the car is stored on the dealer's floor and the title is vested by the manufacturer in the finance company, which releases the car to the dealer under trust receipt. Less frequent is the warehouse plan under which the car is stored in a public warehouse and the advance is protected by a warehouse receipt. Finance company charges are less than on the retail (installment) plan, and wholesale finance is often regarded by the finance company as a means of securing retail paper from the dealer, rather than as yielding much profit itself.

■ INDUSTRIAL BANKS

Industrial banks originally provided a combination of loan and savings features. They raised funds through the sale of investment certificates or receipt of deposits in order to make consumer loans to industrial workers who had neither the credit standing nor the collateral to borrow from commercial banks. In 1910 the first of these institutions was organized in Norfolk, Virginia, through the efforts of Arthur J. Morris. Similar companies followed in other cities. The Morris Plan Corporation of America today owns a controlling interest in a few industrial banks and a minority interest in several others. Through a subsidiary it provides advisory, auditing, and other services to such Morris Plan institutions as desire them. Several other plans were developed, but none has had as widespread application as the Morris Plan. Most of the industrial banks now in operation in the United States are not affiliated with

the Morris Plan but are independently operated and locally owned. Development in general has lagged since 1928 as credit unions and commercial bank consumer credit departments have shown rapid growth.

Roughly two thirds of the states have enacted special statutes authorizing incorporation and operation of industrial banks. Elsewhere, they operate under the general corporation laws, the banking laws, or the small loan laws. The special industrial banking statutes regulate such matters as minimum capital; types, maximum size (such as \$1,000, \$2,000, or \$5,000), and maturity of loans; maximum charges, including rates of discount, investigation or service fees, and delinquency penalties; receipt of deposits and sale of investment certificates; and authority of the state supervisor. Over the years there has been a tendency for industrial banks to expand activities. This is reflected both in the receipt by some institutions of demand deposits subject to check and in the diversity of loan plans now used. Some institutions, in fact, pride themselves on tailoring their loans to the borrowers' needs. Recognition of their changed status is seen in the fact that the Banking Act of 1935 allowed them to join the Federal Reserve System and (when receiving deposits) to take out federal deposit insurance. Those institutions which do not resemble commercial banks comprise a heterogeneous group that do not accept deposits or sell investment certificates.

The average loan of an industrial bank is twice that of a small loan company, and its usual maturity is 12 months. The characteristic loan is still the comaker loan for purchase of household furniture and equipment, medical care, and other extraordinary expenses. The borrower has two acceptable comakers add their names to his note, all three then being jointly and severally liable on the installment. The note is discounted at a rate usually ranging from 6 to 8 percent, investigation expenses (usually 2 percent) are deducted, and the balance is given in cash to the borrower. Repayment is usually required in weekly, semimonthly, or monthly installments. The traditional plan is to have the borrower purchase "investment certificates" with his installments, to pledge the certificates as security for the loan, and to offset the certificates when fully paid against the loan contract. Thus, the loan transaction is separated from the transaction in investment certificates, with a corresponding increase in the rate of return permitted the industrial bank without violating the usury law. Many states recognize the legality of the separation, while others suspend the application of the usury laws to the loans of industrial banks.

Other types of installment loans are also made. Persons of satisfactory standing and income-earning ability can borrow on their single-name promissory note, both for consumption and for business. In some places industrial banks provide funds for small businessmen on much the same terms as do commercial banks. Collateral may take the place of comakers. An increasingly large volume of loans is made on the security of chattel mortgages or other liens on automobiles, household furniture, or other durables, as well as on real estate. Industrial banks have also invaded the field of retail installment finance by purchasing the promissory notes of installment buyers from dealers on much the same terms as do sales finance companies. The range of their loan activities is suggested in Table 77.

TABLE 77

CONSUMER INSTALLMENT CREDITS OF INDUSTRIAL BANKS AND
INDUSTRIAL LOAN COMPANIES OUTSTANDING ON DECEMBER 31, 1951
(000,000 omitted)

Retail installment paper ^a	
Automobile	\$182.1
Other	128.5
Repair and modernization loans ^b	69.7
Personal installment cash loans	285.1
Total	<u>\$659.4</u>

SOURCE: *Federal Reserve Bulletin*.

^a Includes both direct loans and paper purchased.

^b Includes both loans insured by FHA and noninsured loans.

In addition to providing remedial loans, industrial banks, from the outset, have emphasized the promotion of thrift. They have sold interest-bearing investment certificates to nonborrowers, either full paid or payable in installments. When permitted by state law, they commonly accept time deposits instead of selling investment certificates. Most recent has been the receipt of checking accounts, especially those with no minimum balance, which is conducted by only a few industrial banks and is justified as providing complete financial service to the small man. But, as already stated, at this point the line of demarcation between industrial banks and commercial banks fades away.

■ COMMERCIAL BANK CONSUMER CREDIT DEPARTMENTS

Prior to the mid-1920's, commercial banks displayed little interest in providing credit direct to consumers. They preferred to finance consumers indirectly by lending to sales finance companies and to retailers, and to personal finance companies and industrial banks. Such direct consumer loans as they made were single payment instead of installment loans to customers. About 1923 a few commercial banks began to enter the field by establishing personal loan departments, but active progress dates from the establishment of such a department in 1928 by the National City Bank of New York. Thereafter, the number increased rapidly until in 1950 more than 1,500 commercial banks operated consumer credit departments while thousands more which had not established specialized departments also provided consumer credit. The first interest of many lenders in this field may be traced to the FHA Title I repair and modernization loans in the mid-1930's.

The development of personal loan departments had two underlying causes. One was the desire for improved public relations to overcome the low esteem to which banks had sunk in the depression. The other was the need for revenue, reflecting decreased loan demand and lower interest rates, in the face of a substantial volume of excess reserves. The higher rates on direct consumer loans seemed attractive, especially in view of the excellent loss record of the specialized lenders. However, the uncertain legal position of the personal loan department in many states caused banks to hesitate to enter the field of direct consumer credit. In 1940 only one fourth of the states had legislation specifically authorizing the operation of personal loan departments by commercial banks. An additional one fourth appeared to include such operations under the terms of the general banking statutes. In particular, the legality of charging discount rates comparable to those of other consumer credit institutions, as well as investigation, service, delinquency, and other fees, was uncertain in many states.

Loan techniques are, in general, similar to those of industrial banks. Comaker loans provide the greatest volume, although many loans are made on single-name notes. These are either unsecured or secured by collateral such as chattel mortgages (largely on automobiles), savings pass books, stocks and bonds, and life insurance policies. The borrower is required to repay in regular installments, usually monthly, which are either applied directly to reduce the principal or are accumulated in a thrift account which secures the

loan and retires it at maturity. In general, the loans are larger and safer. Hence, the rates are somewhat lower than the rates of other consumer credit agencies. The most frequently charged rate of discount ranges from 6 to 8 percent, but many large institutions with volume operations charge lower rates. In calculating the cost of borrowing, investigation and service fees as well as fines for delinquency must be added.

Besides lending directly to customers who acquire automobiles and other consumer durables and to small businessmen, many commercial banks purchase consumers' installment notes from retailers. This activity, conducted either by the consumer credit department or a separate "time sales" department, is conducted in the same manner as by sales finance companies. In addition, generally through their commercial banking departments, commercial banks continue to lend to sales finance and personal loan companies. Finally, city banks have recently begun to rediscount consumer installment paper for their country correspondents, which continue to make collections. The nature of commercial banks' own consumer installment financing is indicated in Table 78.

TABLE 78

CONSUMER INSTALLMENT CREDITS OF COMMERCIAL BANKS
OUTSTANDING ON DECEMBER 31, 1939, AND 1951
(000,000 omitted)

	1939	1951
Automobile retail		
Purchased	\$ 218	\$1,061
Direct loans	164	1,192
Other retail, direct, and purchased	155	1,081
Repair and modernization loans ^a	209	987
Personal installment cash loans	347	1,213
Total	\$1,093	\$5,434

SOURCE: *Federal Reserve Bulletin*.

^a Includes loans insured by FHA and noninsured loans and also includes both direct loans and paper purchased.

■ REGULATION OF CONSUMER CREDIT

Most of this chapter has dealt with institutions originally designed to provide additional consumer credit facilities—in

- b. In your opinion what has been the effect of the appearance and growth of installment credit upon the present structure of the American economy?
2. In parallel columns compare the cash-lending practices of credit unions, industrial banks, personal finance companies and personal loan departments of commercial banks, with respect to security, charges, and repayment plans. What conclusions can you draw as to their respective fields of service?
3. a. You see a watch priced at \$45. A credit jeweler offers it at \$50, payable \$1 a week, with no down payment and no carrying charge. What is the implicit rate of interest per annum involved in buying from the credit jeweler?
b. A rate chart issued by a commercial bank shows a monthly payment of \$86.20 on a 12-month automobile loan of \$1,000, if each payment is made on the due date. What is the actual interest rate?
c. What are the approximate equal monthly installments on a 15-month loan for \$100 from a personal finance company that charges 3 percent a month, repayable in monthly installments over the 15-month period?
4. a. What is the justification for use of a graduated charge by a personal finance company?
b. Which method of stating charges do you prefer—the percent on the unpaid balance or the discount on the initial principal? Why?
5. a. Why should a wife's signature be desired on a personal note?
b. Over half of the applicants for personal loans are said to be unable to get two comakers and, even when they can, often prefer to pay more and give a chattel mortgage. From the lender's point of view, indicate the justification for charging less on the comaker loan. Why may borrowers who can get comakers prefer the other type of loan?
6. a. In passing upon loans to sales finance companies "only when [the banker] has appraised and approved the general quality of the paper [which comprises the finance company's portfolio] does he find it worth while to analyze the balance-sheet relationships and the profit-and-loss account." (J. M. Chapman and associates, *Commercial Banks and Consumer Installment Credit*, New York, 1940, p. 208.) Explain the basis for the statement.
b. Are the banks better qualified now than 20 years ago to handle installment paper directly themselves?
7. a. To what factors do you attribute the active opening by commercial banks of personal loan departments during the 1930's instead of during the 1920's?
b. Did the new departments represent entirely new business for the banks? Explain.
8. a. Appraise the significance of the credit union in the American financial system.

- b. What arguments can you present in favor of having a system of federal credit unions rather than one of federal personal finance companies?
9. a. Relate the differences in the techniques for controlling consumer credit and commercial credit to the differences between the two classes of credit.
- b. What justification is there for selective control of the segment of the economy represented by consumer credit?

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Note: Items marked * are published by the National Bureau of Economic Research, Inc.

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